



DOCTOR OF CLINICAL PSYCHOLOGY (DCLINPSY)

Doctorate in Clinical Psychology: Main Research Portfolio

1) Narcissism, aggression and violence: A systematic review of clinical and experimental studies; 2) Supporting the Transition to University of Students with Autism Spectrum Disorder; 3) Beliefs in Compulsive Hoarding: A pilot study of their development over time.

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Research Portfolio Submitted in Part Fulfilment of the Requirements for the Degree of Doctorate in Clinical Psychology

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Doctorate in Clinical Psychology

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MAY 2015

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Table of Contents

Word Count.....	2
Table of Contents.....	3
Abstracts	5
Main Project	5
Service Improvement Project	5
Literature Review	6
Literature Review:	
Narcissism, aggression and violence: A systematic review of clinical and experimental studies .	7
Introduction	8
Method.....	11
Results	14
Discussion.....	33
References	36
Service Improvement Project:	
Supporting the Transition to University of Students with Autism Spectrum Disorder	41
Method.....	43
Results	48
Discussion.....	52
Changes resulting from service improvement project	54
References	54
Main Research Project	
Beliefs in Compulsive Hoarding: An examination of their development over time.....	58
Introduction	59
Method.....	62
Results	67
Discussion.....	75
References	78
Executive Summary	82
Connecting Narrative	84
Acknowledgements.....	93
Appendix 1: Pilot University Transition Questionnaire.....	94
Appendix 2: Autism Summer School Evaluation Questionnaire.....	98
Appendix 3: Focus Group Analysis.....	102
Procedure.....	102

Qualitative Results.....	103
Discussion.....	111
References	113
Appendix 4: Beliefs about Hoarding-Revised	114
Appendix 5: Effects of Hoarding Questionnaire.....	119
Appendix 6: Desire to Change Questionnaire.....	121
Appendix 7: Hoarding Self-Efficacy Questionnaire	123
Appendix 8: Trauma Violence and Abuse, Author Guidelines	125
Appendix 9: Autism, Author Guidelines	129
Appendix 10: Journal of Affective Disorders, Author Guidelines.....	134

Abstracts

Main Project

Compulsive hoarding is characterised by the accumulation of and failure to discard, a large number of objects of seemingly little value to the extent that living spaces cannot be used for their intended purpose. Hoarding is considered to be a debilitating and progressive condition. However, little is known about the progressive course of hoarding. Despite developing in early adolescence, individuals do not typically present for treatment until later life. At this point it is difficult to identify the features that represent the core psychopathology from secondary difficulties resulting from chronicity. A research protocol was developed comparing older and younger individuals with hoarding in order to identify, which beliefs are associated with hoarding and which are the result of other 'downstream' secondary problems. However as no study has attempted to recruit younger hoarders it was necessary to carry out a pilot study. The pilot study aimed to assess rate of recruitment, acceptability of protocol and provide preliminary psychometric data on new measures designed for the purpose of this study. As expected the rate of recruitment for younger hoarders was lower than that of older hoarders. Older hoarders were recruited at approximately twice the rate of younger hoarders; 1 per 1.6 weeks compared to 1 per 3.2 weeks. Participant response rate on the questionnaires was 85%. In addition the high response rate and feedback from participants indicates that the procedure is acceptable and not too burdensome. As the data was normally distributed it was possible to carry out provisional data analysis. Results suggested that younger and older hoarders do not differ in severity of hoarding symptoms, beliefs about hoarding or anxiety and depression. However full scale study is necessary to confirm provisional findings.

Service Improvement Project

Autism Spectrum Disorders (ASD) are developmental conditions, which manifest as qualitative impairments in reciprocal social interaction and communication, and a repetitive or restricted pattern of interests, behaviours and activities. Transition to university presents particular challenges for students with ASD. Recent legislation in the UK requires higher education institutions to make reasonable adjustments to prevent a disabled person being placed at a substantial disadvantage. However, little is known about how to best support these students. This study aimed to evaluate the usefulness of a transitional intervention, a residential summer

school, in reducing transition-related stress in students with ASD. The study had two components: (i) to evaluate student satisfaction with the intervention and the degree to which it reduced worries associated with going to university; and (ii) to consider whether the content of the intervention was appropriate to the needs of the students or could be improved to meet their needs. Twenty-five students attending the Autism Summer School participated in the study. Students completed a questionnaire pack prior to attending the summer school and a follow-up pack afterwards. The results indicated that the summer school was helpful in improving students' outlook on starting university, with over three-quarters reporting feeling positive about university following the summer school. The summer school was also effective in reducing the level of concern about the social aspect of university, highlighted to be the most prevalent concern. The summer school did not effectively address concerns about leaving home, academic demands, and concrete or abstract self-care. Efficacy may therefore be improved by tailoring the summer school intervention to the specific worries highlighted by the students themselves. A number of recommendations on how this might be achieved were discussed.

Literature Review

It has long been hypothesised that feelings of inferiority or low self-esteem leads individuals to aggress against those they view as being superior. However, recent studies suggest that it is not just level of self-esteem but *stability* that is relevant to understanding this process. As such, researchers have looked to newer constructs such as narcissism in trying to understand aggressive behaviours. Narcissism is characterised by a dissociation between an unconscious sense of inadequacy and a conscious feeling of superiority. A large number of studies examining the relationship between narcissism and violence have recently been published within both clinical and student populations. Thus, this review aimed to systematically collate the findings of such studies and integrate them within current theories of violence. Electronic literature databases MEDLINE, PsychINFO, EMBASE, Cochrane databases, and Lexis-Nexis (legal database) were consulted to identify studies examining the relationship between narcissism and violence. 19 articles were included in the review describing twenty-four separate samples. Findings suggest that narcissism is relevant in understanding aggression and violence. This was consistent across both clinical and non-clinical populations and therefore does not appear to be an artefact of studying either very violent or student samples. Evidence from student samples strongly supported the association between narcissism and aggression following an ego threat, whilst studies using clinical samples did not examine the effect of an ego threat. The quality of studies and mediating variables were discussed.

Literature Review:
Narcissism, aggression and violence: A systematic review of
clinical and experimental studies

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May 2015

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Target Journal: Trauma, Violence and Abuse

*This journal was chosen because it is devoted to organizing, synthesizing,
and expanding knowledge on all forms of trauma, abuse, and violence*

Introduction

According to Howells and Hollin (1989, p4), “aggression refers to the intention to hurt or gain advantage over people without necessarily involving physical injury; violence involves the use of strong physical force against another person, sometimes impelled by aggressive motivation”. Violence has been a longstanding feature of society. In 1996, the World Health Organisation (WHO) declared violence a major public health issue with the intention of attracting “*greater attention and draw in resources for violence prevention and to stimulate action at local, national, and international levels.*”(Krug, Mercy, Dahlberg, & Zwi, 2002, pg 32). Since then progress has been made in decreasing violence both globally and in the UK, however it is far from eradicated. In 2012, there were 1.9 million incidences of violence recorded in the UK (Office for National Statistics, 2014) and these are known to have high social and financial costs. For example, in 2011, figures released by Trust for London (2011) estimated that domestic violence, which accounts for approximately one quarter of violence, cost England £5.5 billion a year. This included costs incurred by police, civil justice, housing, refuge and health care services. Therefore, successful psychological models and treatments could have considerable implications for victims, clinical and forensic services working with offenders, as well as public services more generally.

Psychological models of violence

The most popular model for understanding violence is Novaco’s (1976) cognitive behaviour theory of anger. Novaco suggests that anger is triggered by an environmental event, which results in physiological arousal and a number of information processing biases including attentional and attribution biases. However whether this ‘anger response’ progresses to violence depends upon the disinhibition of internal control: disinhibition can come about through a range of factors, including person-specific factors such as high levels of physiological arousal, perception of a low possibility of punishment, and the use of drugs or alcohol. As such anger management programmes typically involve increasing self-awareness of anger, triggers and related behaviour coping strategies combined with relaxation training (Beck & Fernandez, 1998). Studies have shown that it can be effective in reducing anger and aggression (DiGiuseppe & Tafrate, 2003). However studies are often carried out with non-clinical populations (e.g., students) and rely on self-report measures (Walker & Bright, 2009b), whilst research with serious offenders is limited (Beck & Fernandez, 1998; Walker & Bright, 2009a). Furthermore there is a debate about the theoretical validity of anger management programmes. Mills and Kroner (2006) found no relationship between anger and violence or recidivism. Similarly other

studies have found that anger does not differ between violent and non-violent groups (Archer, 2004; Loza & Loza-Fanous, 1999). Regardless of the link between anger and violence, focusing on the experience of anger alone neglects to consider the factors that leave some individuals more vulnerable to anger and/or violence provoking stimuli than others.

In contrast theories have placed humiliation at the centre of understanding violence. For example, the psychoanalytical theory of violence presented by Gilligan (1996) suggests that violence is a means to an end; it is used to attain justice by punishing those whom they feel have punished them, unjustly. Gilligan argued that a personally meaningful insult results in an overwhelming sense of shame. The violent person is unable to cope with this shame due to a lack of self-esteem or a healthy sense of pride. Therefore, high self-esteem or pride is seen as a defence against humiliation or shame, without which violence becomes a way of restoring a sense of esteem or pride. Similarly, Beck's (1999) work with couples led him to suggest that anger arises when the perpetrator feels diminished or offended, believes that the offence was unjustified and intentional, and views the offensive act/comment as characteristic of that person, therefore concluding that the person is deserving of punishment. The more recent cognitive model of violence proposed by Walker and Bright (2009b) views violence as an attempt to protect against further injury (humiliation) and the perceived lowering of self-worth and pride. It proposed that, due to early experiences, individuals develop core beliefs about being vulnerable and weak. To defend against and hide these beliefs from others conditional assumptions develop which manifest as a veneer of confidence and arrogance (i.e. I must never let others see me vulnerable). Social situations that generate embarrassment, or the threat of embarrassment, activate these negative core beliefs making the individual believe that someone has made them look foolish, and that this perpetrator is deserving of punishment

Self-esteem and Violence

In line with these theories, it has been a longstanding view in psychology that feelings of inferiority or low self-esteem predispose people to aggressive or violent behaviour (Horney, 1950). Although empirical evidence does support this perspective, many authors have argued that it is in fact high self-esteem that results in violence. Most notable of these is Baumeister (1996) who argued that violence results from a very positive view of the self that is threatened. A recent systematic review which sought to clarify this issue examined 19 studies, 12 of which found low self-esteem to be related to violence, five found no relationship, one found high self-esteem related to violence and one reported a curvilinear relationship in which both high and low self-esteem were related to violence (Walker & Bright, 2009b). These findings highlight the complexity of understanding the relationship between self-esteem and violence.

Firstly, self-esteem is far more multidimensional and dynamic than the term suggests. Authors have argued that it is not just level of self-esteem but stability that is relevant. Kernis (1993) and Kernis et al. (1989) conducted several studies regarding this issue and the findings generally suggest that people with high but unstable self-esteem report the highest tendencies to experience anger and hostility, whereas people with high and stable self-esteem report the lowest. As a result, researchers have looked to newer constructs such as narcissism and unstable self-esteem in trying to understand aggressive behaviours (Baumeister, Bushman, & Campbell, 2000).

Narcissism and Violence

A central feature of narcissism is a dissociation between an unconscious sense of inadequacy and a conscious feeling of superiority (Kernberg, 1975), more recently thought of in terms of low implicit self-esteem and high explicit self-esteem (Tafarodi & Ho, 2006). Self-enhancement and grandiosity are therefore seen as strategies to regulate internal feelings of inadequacy by countering them with feelings of superiority, thereby allowing a person to maintain a sense of pride and self-esteem. Robins and colleagues (2001) suggested that narcissists, more than other individuals, are motivated to seek out situations in which they can feel pride and avoid situations where they might experience humiliations or shame. Bushman and colleagues (2009b) examined the relationship between both self-esteem and narcissism on violence. They found no independent effect for high self-esteem alone; but high self-esteem combined with high narcissism was related to aggression in the presence of an insult. Hence it may be that narcissism is central to understanding the relationship between self-esteem, and violence and aggression.

Aim of current study

Prior to this review databases such as Cochrane, Pubmed and Google scholar were checked for reviews looking at the relationship between narcissism and violence and aggression. A number of narrative reviews exploring the relationship between self-esteem, shame and violence were identified (Baumeister et al., 2000; Baumeister et al., 1996; Salmivalli, 2001; Walker & Knauer, 2011). These reviews also explored briefly the potential role of narcissism in explaining the link between shame and violence. However, no systematic review has explored the relationship between narcissism and violence. A large number of studies looking at the relationship between narcissism and violence have been published in recent years with both

clinical and student populations (Bettencourt, Talley, Benjamin, & Valentine, 2006; Svindseth, Nottestad, Wallin, Roaldset, & Dahl, 2008). Therefore, a review that systematically collates and integrates the findings of these studies into current theories of violence is timely.

Before continuing it would be helpful to clarify a number of semantic and conceptual issues. The terms *violence* and *aggression* are used somewhat interchangeably in the research and as such will be examined in combination in this review. However strictly speaking, laboratory procedures measure aggression but not violence; insofar as the latter is limited to acts that cause serious harm to victims (Bushman et al., 2009a). As such, studies using clinical samples are typically examining violence (e.g. domestic violence), whereas experimental studies (e.g. application of noise blast) are typically examining aggression.

The second point to note is that narcissism is a complex construct and is thought to comprise of a number of sub components. Component analysis on the Narcissistic Personality Inventory (NPI) generated seven subscales authority, superiority, exhibitionism, entitlement, vanity, exploitativeness and self-sufficiency (Raskin & Terry, 1988). A number of studies have looked at the effect of one of more subscales (e.g. entitlement) on violence (Konrath, Bushman, & Campbell, 2006). However an exploration of these sub-components is beyond the scope of this review and thus the aim of this study is to explore the effect of the construct narcissism only

Research questions

Based on the literature the following research questions were considered:

Question 1: Is there a significant relationship between narcissism and aggression/violence?

Question 2: Is the relationship between narcissism and aggression/violence greater in the presence of an ego threat?

Question 3: Is the relationship between narcissism and violence/aggression consistent across clinical and non-clinical samples?

Method

Search strategy

Electronic literature databases MEDLINE, PsychINFO, EMBASE Cochrane databases and Lexis-Nexis (legal database) were searched to detect relevant studies. No restrictions were put in place with regard to publication year. The following combinations of key words were entered in the databases' topic/subject search fields to identify eligible publications: Narcissism

(MeSH term) / Narciss*/ ego*/ egotism / egolistic / egomania / “high self esteem” / “inflated self esteem” AND violence (MeSH term) / Aggression (MeSH term) / aggress* / conflict / attack / coerc* / cruel* / bully* / “agonistic behavior”. These search terms were generated through discussion with an experienced researcher in this field (JW) and were subjected to thesaurus mapping in both Medline and PsychINFO.

Reference sections of included studies and the narrative reviews were screened to detect additional studies. Finally, Google Scholar was consulted to check publications that cited selected studies. The last search was performed on November 20, 2014.

Selection of literature

References were imported into Endnote and duplications were removed. Titles and abstracts were then studied to determine selection for full-text reading. Full texts of selected articles were studied to decide upon eligibility for inclusion. The PECO framework used in this review defining the (P)opulation, (E)xposure, (C)omparison and (O)utcome of interest was as follows:

- *P* Adults aged 18 years or over
- *E* Narcissism
- *C* Statistical examination of the relationship
- *O* Aggression and/or violence

Inclusion criteria. Studies were included if they (1) were primary studies examining the relationship between narcissism and aggression or violence in those over the age of 18, (2) reported statistical findings between study variables, (3) were written in English, and (4) were published in peer-reviewed journals. There were no restrictions with regard to publication year, but all of the included studies had been published in the last 25 years.

Exclusion criteria. Papers were excluded if participants were less than 18 years old. Studies were also excluded if the violence was sexually motivated (e.g., rape, sexual aggression) or politically motivated (e.g., war, terrorism) as treatment models and protocols are different for these forms of violence (Marques, et al 1994; Beck & Fernandez, 1998)

. In addition studies were excluded if they only reported on subscales of narcissism unless the author could provide data on the effect of NPI total. Single case studies, reviews, books, commentaries, unpublished dissertations and papers written in languages other than English were excluded.

Inter-rater reliability

Fifteen percent of the titles and abstracts were selected randomly using a random number generator. Two members of the research team individually assessed each of the papers for eligibility for inclusion. An *a priori* procedure was followed to resolve any inter-rater discrepancies: in the case of a disagreement regarding the inclusion of a certain study, both reviewers were asked to re-assess the paper for inclusion. If the reassessment still led to a disagreement between the reviewers, an independent third party was also asked to assess the paper in question, and the decision would be based on the majority decision. Inter-rater agreement was good with a Cohen's Kappa=0.80, 95% confidence interval of 0.413 to 1.00. Data extraction and the assessment of quality were inter-rated for all included papers to reduce risk of human error and any identified errors corrected.

Quality of the papers

Quality measures for systematic reviews of observational studies are less well established than in those of randomised controlled trials; a number have been developed but none have been fully validated. The Cochrane Collaborative Review Group recommends the Newcastle-Ottawa Scale, (NOS; Wells et al., 2000) for assessing the quality of non-randomised studies in meta-analyses, as it is quite comprehensive and has been partly validated (Higgins & Green, 2009). The methodologies of studies included in this systematic review were varied and included cohort studies, cross-sectional and experimental designs. Due to the variation in methodology, the NOS scale was adapted. Quality was assessed according to the following criteria: (i) selection of the study groups (i.e., representativeness of the cases, selection of controls and definition of controls for case-control studies, valid measure of the exposure to primary risk factor; (ii) comparability of the groups (i.e., confounding factors adequately controlled for); (iii) Outcome (i.e., valid assessment of outcome, adequate description of statistical analysis). If the study fulfilled a criterion a point of one was given and if not it was awarded zero. A total quality score was then generated by summing the number of criteria met by each study out of a potential ten.

Results

Study Selection

The initial search yielded 2,880 articles. Based on title and abstract, 166 articles were selected for full-text assessment. Careful reading of these papers highlighted that there was a sufficient number of studies using objective measures of violence or aggression for a systematic review and evidence synthesis. Therefore all studies that used subjective reports of violence and aggression such as Buss–Perry Aggression Questionnaire (Buss & Perry, 1992) were excluded on the grounds of quality and the difficulty of drawing robust conclusions based on self-report measures.

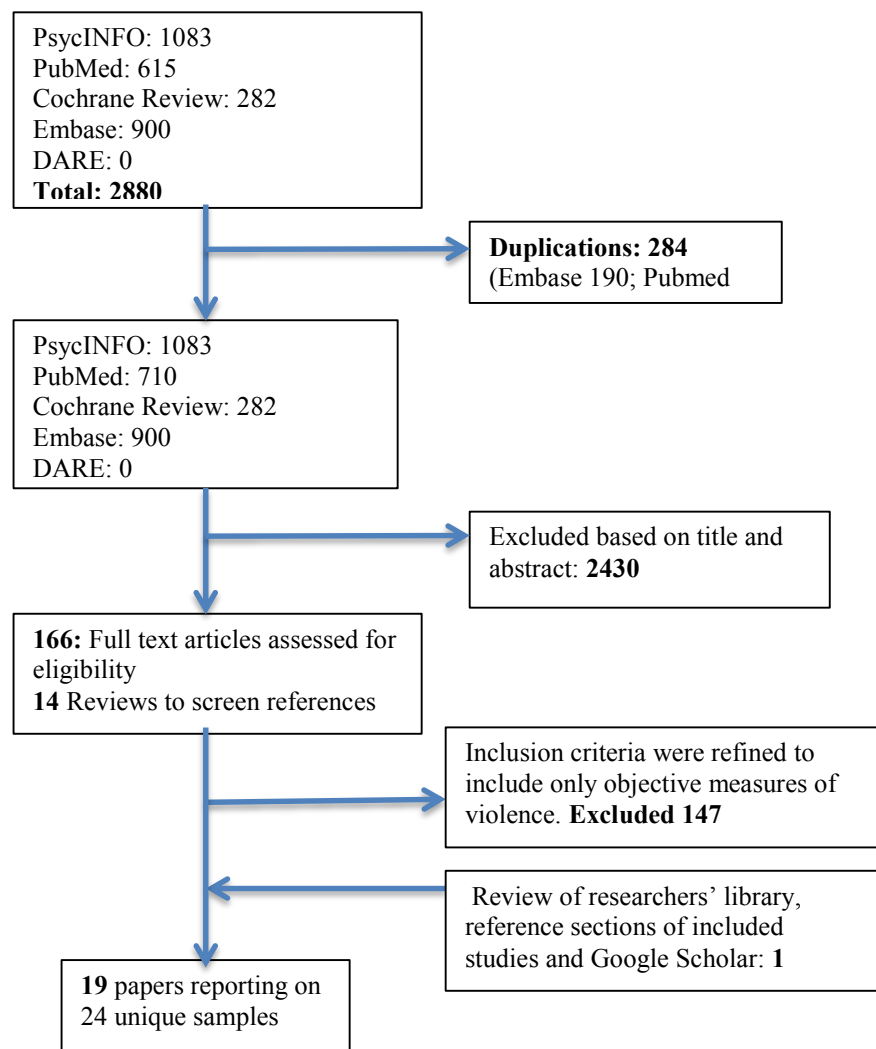


Figure 1: Study selection flow chart

Examination of the reference lists of these articles and those of previous narrative reviews revealed one additional article. A consultation of Google Scholar to check which articles cited included articles did not produce any additional relevant articles. Hence, 19 articles were included in the review. These articles described 24 separate samples (Figure 1). The included studies were conducted on twenty-four unique samples. Nineteen studies were conducted in different jurisdictions within the United States. The remaining studies had been performed in Canada (3), Norway (1), and the United Kingdom (1).

Description of the Selected Studies

Design of studies

The design of included studies was quite varied. Studies were divided into those examining the relationship between narcissism and aggression or violence (see table 1, 2) and those examining the relationship between narcissism and aggression in the presence of an ego threat (see table 3, 4). Twelve studies examined the relationship between narcissism and aggression; of these six were observational studies and six were cross-sectional. Of the twelve studies examining the effect of an ego threat, ten used an experimental paradigm where participants were randomised to ego threat condition or no ego threat. Two were observational studies. All studies that used clinical samples used either an observational or cross-sectional design, whereas the majority of studies using student samples used an experimental design.

Nature of the sample

Participants were individuals over the age of 18 years. Seventeen studies used university students and, of these, eleven provided course credit in exchange for participation, whilst three recruited from introductory psychology classes (Barry, Chaplin, & Grafeman, 2006; Maples et al., 2010), two recruited from an undergraduate volunteer pool (McIntyre et al., 2007; Reidy, Foster, & Zeichner, 2010) and one did not specify (Bushman et al., 2009a). Five studies were carried out with a forensic population and two were carried out with a psychiatric population. None of the studies examining the effect of ego threat on the relationship between narcissism and aggression were carried out with a clinical population.

Table 1: Narcissism and aggression in clinical samples

Authors	Sample	Design	Measure	Findings
Beasley and Stoltenberg, 1992	Target group: Perpetrators of domestic violence (n=49) Control Group: non-violent but distressed relationships (n=35) 100% male Mean age: 34 Ethnicity: 87% Caucasian Country: United States	Cross-sectional comparison of perpetrators of domestic violence and non-violent control group	N=NPI; MCMI A/V= Physical violence defined as assaults on the partner's body confirmed by arrest history or evidence by victim	1. Significant difference between abusive group (A) and non abusive group (NA) on MMCI measure of narcissism $F(1,71)=10.57$, $p<.0001$; A ($m=72.2$, $sd=23.22$); NA ($m=56.73$; 19.72) 2. No significant difference between groups on the NPI; A ($m=17.02$, $sd=7.78$), NA ($m=16.08$, $sd=6.94$) 3. (MANCOVA)
Cale and Lilienfeld 2006	Prison inmates N=98 100% male Mean age 23.7 Ethnicity: Country: United States	Observational study looking at predictors of incidences of violence	N: NPI A/V: behaviour ratings from prison record and informant ratings from prison officers and counsellors	1. Narcissism was significantly related to aggression ($r^2=.14$, $p<.05$) (Multiple Regression)
Coid, 2002	Prison inmates N= 81 100% male Mean age (SD): 34 (7.58) Ethnicity: nr Country: United Kingdom	Observational study looking at predictors of incidences of violence	N: SCID-II A/V: Physical Violence. Incidences of violence towards inmates and violence towards prison staff rated through review of prisoners' unit file, the prison file and discussion with prison staff working at each unit.	1. Narcissism predicted violence against inmates (adjusted odds ratio= 2.84; (CI 1.08-7.47); $p=0.034$.) 2. Narcissism predicted violence against staff (adjusted odds ratio=2.84; CL(1.08-7.42); $p=0.03$) (Logistic regression)
Goldberg et al., 2007	Psychiatric inpatients N= 76 Aggressive group N=20 Non-aggressive group N=56 26% female Mean age (SD): 38.6 (11.38) Ethnicity: nr Country: United States	Cross sectional observational study, participants were split into aggressive and non-aggressive group based on ROAS of 5 or greater and compared on Narcissism	N: NPI A/V: Both physical and non-physical aggression against others using ROAS based on chart notes	1. No significant difference in Narcissism between aggressive group ($m=16.85$) and non aggressive group ($m=14.36$) (MANCOVA)

Svindseth et al. 2008	Psychiatric Inpatient N=186 High narcissism group N=98 Low narcissism group N=88 41% female Mean age (SD): 37.3 (13.4) Ethnicity: nr Country: Norway	Cross-sectional study. Participants divided into high and low narcissism group	N: NPI 21 A/V: Physical Violence observed on the wards and documentation in the medical records	<ol style="list-style-type: none"> 1. There was a significant correlation between aggression and NPI ($r=0.32$; $p<0.01$) (Semipartial correlation) 2. In the presence of High Narcissism (low narcissism=ref) No Violence (ref) (OR=1) Mild/Moderate V (OR=1.83; 95%CI= 0.97-3.43; $p=0.06$) Severe V (OR= 13.12; 95%; CI=2.90-59.40; $p=0.001$) (Univariate Logistic regression) 3. In the presence of High Narcissism (low narcissism=ref) No Violence (ref) (OR=1) Mild/Moderate V (OR=1.21; 95%CI= 0.51-2.87; $p=0.67$) Severe V (OR= 11.46; 95%; CI=2.02-65.60; $p=0.006$) (Multivariate Logistic regression)
Warren et al. 2002	Inmates in maximum security prison Target group: N=132 with Cluster B PD Control group N= 128 without Cluster B PD. 100% female Age: nr Ethnicity: 64% minority, 32 non-minority Country: United States	Cross sectional study retrospectively looking at predictors of incarceration for violent crime	N: SCID-II A/V: Physical Aggression defined as incarceration for a violent offense	<ol style="list-style-type: none"> 1. Narcissistic PD significantly predicted current incarceration for any violent crime, including homicide ($B = 1.0 \pm 0.33$, $p < .01$, OR = 7.57) 2. Narcissistic PD significantly predicted current incarceration for any violent crime, excluding homicide ($B = 0.80 \pm 0.26$, $p < .01$, OR = 4.92) <p>1. (Logistic regression)</p>
Wiehe, 2003	Target group: Abusive parents (n = 52) Control group: foster parents (n = 101) 76% females Age: nr Ethnicity: 49% White, 45% African-American, 3% Hispanic, 3% Other Country: United States	Cross sectional study comparing abusive and non-abusive parents	N=Hypersensitivity Narcissism Scale (HSNS) A/V: Both physical and non physical aggression defined by investigation for child physical or emotional abuse by child protective service agencies	<ol style="list-style-type: none"> 1. Abusive Parents (AP) exceeded the Foster Parents (FP) on measure of Narcissism $F(1,71)=10.57$, $p<.0001$; AP ($m=72.2$, $sd=23.22$) FP ($m=56.73$; 19.72) ANOVA 2. Narcissism was a significant predictor of aggression ($R^2=.28$; $F=18.8$; $\beta=-.46$) Regression

N= narcissism; A/V= aggression/violence; NPI= Narcissism Personality Inventory; MMCI= Millon Clinical Multiaxial Inventory; SCID-II= Structured Clinical Interview for DSM-III for axis II personality disorder; HSNS= Hypersensitivity Narcissism Scale

Table 2: Narcissism and aggression in student samples

Authors	Sample	Design	Measure	Findings
Maples et al. 2010 Study 1	UG students N=108 45% female Mean age (SD):19.16 (1.30) Ethnicity: 80% Caucasian Country: United States	Observational study where participants filled in Narcissism measures and then took part in competitive task	N: SCID-II A/V: Physical Aggression Electric shock delivered to opponent during Response Choice Aggression Paradigm. Aggression defined as electric shock duration and frequency	2. There was a significant correlation between DSM-IV NPD and aggression; $r = .22$ $p < .05$ (bivariate correlation)
Maples et al. 2010 Study 2	UG students N=134 43% Female Mean age (SD):19.31 (1.67) Ethnicity: 81.3% Caucasian Country: United States	Observational study where participants filled in Narcissism measures and then took part in competitive task	N: SCID-II A/V: Physical aggression derived from intensity, duration, and frequency of shocks delivered. Response Choice Aggression Paradigm	1. Aggression was not significantly correlated with DSM-IV NPD ($r = .15$ $p > .05$) (bivariate correlation)
McIntyre et al. 2007	UG students N= 176 73% Female Mean age: 22 Ethnicity: 60% White, 20% Asian or Asian-American, 11% Black, 3% Hispanic, 1% Native American, and 5% Other Country: United States	Observational study where participants filled in Narcissism measures and then took part in simulated war game	N: NPI A/V: Non physical aggression defined by whether or not the player made an unprovoked attack during simulated war game	1. In a mixed sample of men and women high narcissism was not significantly related to aggression: Narcissism: Low ($B = 0$; $\exp(B) = 1$; $p = \text{Referent}$) Medium ($B(SE) = 0.21(0.66)$; $\exp(B) = 1.24$; $p = 0.75$; High ($B(se) = 0.74(0.67)$; $\exp(B) = 2.09$; $p = 0.271$) Very High ($B(SE) = 0.86(0.64)$; $\exp(B) = 2.37$; $p = 0.174$) 2. In men, high levels of narcissism predicted greater than 10 times greater odds of attacking: Narcissism Low ($B = 0$; $\exp(B) = 1$; $p = \text{Referent}$) Medium ($B(SE) = 1.66(1.03)$; $\exp(B) = 5.23$; $p = 0.107$; High ($B(se) = 2.77(1.07)$; $\exp(B) = 15.92$; $p = 0.010$) Very High ($B(SE) = 2.46(1.15)$; $\exp(B) = 11.70$; $p = 0.032$) (Logistic Regression)

Reidy et al. 2010	UG students N= 137 100% males Mean age (SD): 19.2 (1.4) Ethnicity: 82.5% Caucasian, 7.3% Asian, 4.4% Black/African- American, 1.5% Hispanic/Latino, 0.7% American- Indian, and 3.6% Other Country: United States	Observational study where participants filled in Narcissism measures and then took part in competitive task	N=NPI A/V: Physical Aggression Electric shock delivered to opponent during Response Choice Aggression Paradigm. Aggression defined as electric shock duration and frequency	1. There was a significant relationship between narcissism and aggression ($B=.39$, $SE=.21$, $\text{Exp}(B)= 1.48$) indicated that for every one standard deviation increase in narcissism, the odds of being an unprovoked aggressor in this study increased by 48% (Logistic regression)
Terrell et al. 2008	UG students N=150; 52% female Mean age (SD):19.27 (2.47). Ethnicity: 73% Caucasian, 11% Latino/Hispanic, 7% Asian, 3% African–American, 3% Native American, 3% other. Country: United States	Observational study where participants filled in narcissism measures and then took part in competitive task with fake participant	N: NPI A/V: Physical aggression defined by the frequency of noise blasts administered to fake participant during a competitive computer task	1. A significant main effect for narcissism ($F_{(2, 126)}=4.37$, $p=.015$, $\eta^2_p = .065$), where participants higher in narcissism were more likely to deliver noise blasts than individuals low in narcissism (ANOVAS) 2. For males there was a significant correlation between narcissism and aggression ($r=.26$ $p<.05$) 3. For females relationship between aggression and narcissism was not significant. ($r=.08$ $p<.05$) (Correlation)

N= narcissism; A/V= aggression/violence; NPI= Narcissism Personality Inventory; SCID-II= Structured Clinical Interview for DSM-III for axis II personality disorder;

Table 3: Narcissism and direct aggression in the presence of an ego threat

Authors	Sample	Design	Measure	Findings
Barry et al. 2006	UG psychology students N=120 50% females Age: nr Ethnicity: 79% Caucasian Country: United States	Experimental study randomised to receive positive or negative feedback (ego threat) from false participant.	N: NPI A/V: Non-physical aggression defined by how much they hinder fake participant in Fishing simulation task (Gifford & Gifford, 2000)	<ol style="list-style-type: none"> 1) Significant main effect for narcissism ($\text{Beta} = .27, p < .01$) with higher narcissism related to increased aggression after feedback. 2) Significant interaction between feedback and narcissism ($\text{Beta} = 0.21, p < .05$), with negative feedback predicting an increase in aggression among participants scoring high on narcissism. 3) Significant three-way narcissism by feedback by sex interaction for predicting changes in aggression, ($F_{(7, 112)} = 5.33, p < .001, r^2 \text{ change} = .04$). After positive feedback, high narcissism was associated with slight increases in aggression for males and little change in aggression for females. Following negative feedback, males with high narcissism showed high increases in aggression, whereas females with narcissism demonstrated only slight increases in aggression. <p>(Multiple Regression)</p>
Bushman et al., 1998 Study 1	UG psychology students N=260 50% female Age: nr Ethnicity: nr Country: United States	Experimental study randomised to receive positive or negative feedback (ego threat) from false participant.	N=NPI A/V: Physical aggression: the intensity and duration of a noise blast administered to fake participant during competitive reaction time task (Taylor, 1967)	<ol style="list-style-type: none"> 1) Significant main effect of narcissism on aggression, $F_{(1, 245)} = 13.92, p < .05, b = 0.06, SE = 0.02, r = .27$. 2) A significant interaction between narcissism and ego threat, $F_{(1, 245)} = 5.04, p < .05, b = 0.08, SE = 0.03$ indicating that high narcissism and an ego threat resulted in high aggression. 3) The relationship between narcissism and aggression was stronger when the evaluation was negative, ($F_{(1, 245)} = 20.36, p < .05, b = 0.11, SE = 0.02, r = .37$) than when it was positive ($F_{(1, 245)} = 4.59, p < .05, b = 0.05, SE = 0.02, r = .18$) but both were significant. <p>(Multiple Regression)</p>
Bushman et al 2009 Study 1 (reanalysis of Bushman et al., 1998; Study 2)	UG psychology students N=140* 50% female Age: nr Ethnicity: nr Country: United States	Experimental study randomised to receive positive or negative feedback (ego threat) from false participant.	N=NPI A/V: Physical aggression: the intensity and duration of a noise blast administered to fake participant during competitive reaction time task (Taylor, 1967)	<ol style="list-style-type: none"> 1) Narcissism was positively related to aggression when the evaluation was negative ($F_{(1, 254)} = 9.62, p < .05, b = 0.09, SE = 0.04, r = .25$), but it was unrelated to aggression when the evaluation was positive ($F_{(1, 254)} = 0.34, p > .05, b = -0.02, SE = 0.02, r = -.10$, respectively) <p>(Multiple Regression)</p>

Bushman et al 2009 Study 2	UG psychology students N=132; 50% females Age: nr Ethnicity: nr Country: United States	Observational study: All received negative feedback (ego threat) by fake participant.	N=NPI A/V: Physical aggression: the intensity and duration of a noise blast administered to fake participant during competitive reaction time task (Taylor, 1967)	1) The main effect of narcissism was not significant ($b=0.040$, $t(128)=1.86$, $p<.07$) 2) In the presence of negative feedback there was a significant relationship between narcissism and aggression was ($r=.25$) (Multiple Regression)
Jones et al 2010	N= 82 60% Females Mean age: 20.4 Ethnicity: nr Country: Canada	Experimental study randomised to receive positive or negative feedback (ego threat) from false participant.	N=NPI A/V: Physical aggression: the intensity and duration of a noise blast administered to fake participant during competitive reaction time task (Taylor, 1967)	1) The main effect of narcissism was not significant ($\text{Beta} = .16$, $t=1.32$, $p=.19$) 2) There was a significant interaction between narcissism and feedback whereby negative feedback evoked greater aggression among those high in narcissism ($\text{Beta}= 2.23$, $t = 2.32$, $p = .02$) (Multiple Regression)
Kirkpatrick et al, 2002 Study 1	N=88 55% women Age: Ethnicity: nr Country: United States	Experimental study randomised to receive positive or negative feedback (ego threat) from false participant.	N=NPI A/V: Physical aggression defined by the amount of hot sauce put on the false participants food	1) Main effect of narcissism was not significant ($\text{Beta}= -.09$, $p > .10$) 2) The interaction between narcissism and feedback was not significant ($\text{Beta}= .13$ $p>.05$). 3) When self esteem was controlled for, narcissism was a negative predictor of aggression ($\text{Beta}=-.24$, $p < .05$) (Multiple Regression)
Kirkpatrick et al, 2002 Study 2	N=75 53% women Age: Ethnicity: nr Country: United States	Experimental study randomised to receive positive or negative feedback (ego threat) from false participant.	N=NPI A/V: Physical aggression defined by the amount of hot sauce put on the false participants food	1) Main effect for narcissism was a significant, positive predictor of aggression ($\text{Beta} = .27$, $p < .05$) 2) The interaction between narcissism and feedback was not significant ($\text{Beta} = .15$, $p < .10$). 3) When self esteem was controlled for narcissism was not significant predictor of aggression in this equation ($\text{Beta}= .23$, $p > .10$) (Multiple regression)
Twenge and Campbell 2003 Study 3	N=31 48% women Mean age: 18.9 Ethnicity: 74% White and 26% racial minority Country: United States	Observational study: All received a social rejection (ego threat) by fake participant.	N=NPI A/V: Physical aggression: the intensity and duration of a noise blast administered to fake participant during competitive reaction time task	1) When rejected narcissism was significantly related to aggression ($b=0.12$; $\text{Beta}=.51$; $t=2.95$ $p<.01$) (Multiple Regression)

Vaillancourt 2013 Study 1	N= 176 55% female; Mean age (SD): 18.78 (1.80) Ethnicity: 44.3% Caucasian, 21% Asian, 15.3%, South Asian Country: Canada	Experimental study randomised to receive positive or negative feedback (ego threat) from false member of university staff.	N=NPI A/V: Non-physical aggression score given to false university staff member on the students' evaluations of teaching form	1) In the negative feedback group there was a significant correlation between narcissism and aggression ($r = -.26$; $p < .01$) 2) In the positive feedback group there was not a significant relationship between narcissism and aggression ($r = .09$; $p > .05$) (Correlation)
Vaillancourt, 2013 Study 2	N=160 50% female Mean age (SD): 19.16 (3.18) Ethnicity: 50% Caucasian, 20.3% South Asian, 15.2% Asian Country: Canada	Experimental study randomised to receive positive or negative feedback (ego threat) from false member of university staff.	N=NPI A/V: Non-physical aggression score given to false university staff member on the students' evaluations of teaching form	1) Correlation: narcissism was not related with SETs. 2) The correlation between narcissism and aggression was not significant amongst those who received negative ($r = -.07$) or amongst those who received positive feedback ($r = .00$) (Correlation)

N= narcissism; A/V= aggression/violence; NPI= Narcissism Personality Inventory

Table 4: Narcissism and displaced aggression following an ego threat

Authors	Sample	Design	Measure	Findings
Bushman et al 2009 Study 1 (reanalysis of Bushman et al., 1998; Study 2)	N=140* 50% female Age: nr Ethnicity: Country: United States	Experimental study randomised to receive positive or negative feedback (ego threat) from false participant. Participants were also randomised to either direct aggression (displayed in table 3) or displaced aggression condition.	N=NPI A/V: Physical aggression: the intensity and duration of a noise blast administered, during competitive reaction time task, to a fake participant different to the one who administered the ego threat (Taylor, 1967)	1) Narcissism was not related to displaced aggression when feedback was positive ($F_{(1, 254)} = 0.99$, $p > .05$, $b = 0.02$, $SE = 0.02$, $r = .14$) or negative ($F_{(1, 254)} = 0.61$, $p > .05$, $b = 0.02$, $SE = 0.03$, $r = .10$) (Multiple Regression)
Martinez et al. 2007	N=92 Gender: nr Mean age (SD): 19.5 (2.01) Ethnicity: 87% Caucasian Country: United States	Experimental study randomised to receive negative feedback, positive feedback or delayed feedback from a false participant	N=NPI A/V: Physical aggression: the intensity and duration of a noise blast administered, during competitive reaction time task, to a fake participant different to the one who administered the ego threat (Taylor, 1967)	1) Significant main effect of narcissism on aggression ($Beta = .26$, $b = .45$, $p < .01$) even when self esteem was controlled for. 2) The effect of narcissism was stronger in the delayed feedback condition than in the negative feedback condition ($b = -.82$, $p < .05$) the positive condition ($b = -1.40$, $p < .01$) (Stepwise regression)
Twenge and Campbell 2003 Study 4	N=61 Gender: 49% female Mean age: 18.4 Ethnicity: 82% White, 18% racial minority Country: United states	Experimental paradigm: Participants were randomised to experience rejection or acceptance by fake participants	N=NPI A/V: Physical aggression: the intensity and duration of a noise blast administered, during competitive reaction time task, to a fake participant different to the one who administered the ego threat (Taylor, 1967)	1) Significant main effect of narcissism ($b = 0.06$; $Beta = .21$; $t = 1.65$, $p < .05$) 2) Significant interaction between narcissism and feedback ($b = 0.46$; $Beta = .28$; $t = 2.43$; $p < .01$) The relationship between narcissism and aggression was stronger for those who received an ego threat ($r(37) = .42$, $p < .01$) than those who did not ($r(20) = -.17$, $p > .05$) 3) Narcissism remained significant even after self esteem was controlled for (Multiple regression)

Note: * = total N for study was 280 but N=140 for the displaced aggression condition and N=140 in the direct aggression condition (displayed in table 3). N= narcissism; A/V= aggression/violence; NPI= Narcissism Personality Inventory;

Measurement of Narcissism

The most commonly used measure of narcissism was the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979). The 40-item version of this measure was used by 21 of the included studies. The NPI is based on DSM criteria for Narcissistic Personality Disorder, NPD (Raskin & Terry, 1988) and has been validated using clinical samples (Prifitera & Ryan, 1984) and non-clinical samples (Raskin & Terry, 1988). One study used a 21-item version of the NPI, which they adapted for the purpose of this study (Svindseth, Nøttestad, Wallin, Roaldset, & Dahl, 2008). However to the best of our knowledge there is no data validating this shorter version. Three studies used the Structured Clinical Interview for DSM-III (SCID-II) for axis II personality disorder diagnoses (Coid, 2002; Maples et al., 2010). One study used the Millon Clinical Multiaxial Inventory-II, (MCMI-II; Millon, 1985). The MCMI-II, like the NPI, was designed to tap characteristics consistent with the *DSM-III-R* criteria but focuses more on narcissistic characteristics consistent with individuals diagnosed as personality disordered. In contrast the NPI measures narcissism as it occurs in a healthy population. One study used the Hypersensitivity Narcissism Scale (HSNS; Hendin & Cheek, 1997) which focuses more on symptoms of vulnerability and hypersensitivity, indicative of the concept of narcissism as found in psychoanalytic literature (Kernberg, 1975; Perry & Perry, 1996) as opposed to the NPI and SCID-II, which focus more on boisterous, self-aggrandizing, vain, and interpersonally exploitative behaviour (Hendin & Cheek, 1997; Wink, 1991).

Aggression and violence

As outlined above, this study used Howells and Hollin's (1989) definition of aggression and violence which states that "aggression refers to the intention to hurt or gain advantage over people without necessarily involving physical injury; violence involves the use of strong physical force against another person, sometimes impelled by aggressive motivation". Of the twenty-four studies included, twenty looked at physical aggression; of these, eight studies defined aggression as the intensity and frequency of noise blasts administered to an opponent, six studies used real world incidences of violence (e.g., violent crime conviction, incidences of violence against staff), three studies defined aggression as the intensity and frequency of electric shock administered to an opponent and two studies defined aggression as the amount of hot sauce allocated to an opponent's food.

Four studies looked at non-physical aggression; two studies used scores or evaluations given to a false participant as a measure of aggression; two studies defined aggression as hindering an opponent's performance during a competitive game.

Provoked aggression (Ego threat)

Twelve studies looked at the effect of an ego threat on the relationship between narcissism and violence. Ten studies used a negative evaluation on a piece of work as an ego threat and two studies by the same authors used social rejection by peers.

There was a distinction between whether studies examined direct aggression or displaced aggression. Direct aggression refers to aggression towards the individual who administered the ego threat, whilst displaced aggression refers to aggression directed towards someone who was not responsible for the ego threat. Ten studies looked at direct aggression and two looked at displaced aggression. One study randomized participants to either a direct aggression or displaced aggression condition (Bushman et al., 2009b). For the purpose of the analysis the results of this study were split between the table section for direct aggression and the table section for displaced aggression (See table 3 and 4 respectively).

Table 5: Quality rating for each study listed in alphabetical order

Study	Selection					Comparability					Outcome		Quality Rating
	Size	Type	Sample selection	Control group	Valid measure of risk factor	Age	Gender	Self Esteem	Previous violence	AntisocialPD /Psychopathy	Assessment of Outcome	Statistics described	
Barry et al 2006	120	UG	0; SOC	1	1; NPI	0	1	0	nr	nr	1	1	5
Beasley and Stoltenberg 1992	84	F	1; REP	1	1; NPI 1; MCMI	0	0	0	nr	0	1	1	5
Bushman et al. 1998 Study 1	260	UG	0; SOC	1	1; NPI	nr	1	1	nr	nr	1	1	6
Bushman et al. 2009 Study 1	280	UG	0; SOC	1	1; NPI	nr	0	1	nr	nr	1	1	6
Bushman et al. 1998 Study 2													
Bushman et al 2009 Study 2	132	UG	0; SOC	0	1; NPI	nr	1	1	nr	nr	1	1	5
Cale & Linienfeld, 2006	96	F	1; REP	0	1; NPI	0	0	0	0	0	1	1	4
Coid, 2002	81	F	1; REP	0	1; SCID-II	0	0	0	0	1	1	1	5
Goldberg et al. 2007	76	P	1; REP	1	1; NPI	0	0	0	nr	nr	1	1	5
Jones and Paulhus, 2010	82	UG	0; SOC	1	1; NPI	0	1	1	nr	1	1	1	7
Kirkpatrick et al. 2002 Study 1	88	UG	0; SOC	1	1; NPI	1	0	1	nr	nr	1	1	6
Kirkpatrick et al. 2002 Study 2	88	UG	0; SOC	1	1; NPI	1	0	1	nr	nr	1	1	6
Maples et al. 2010 Study 1	108	UG	0; SOC	0	1; SCID-II	0	0	0	nr	nr	1	0	2
Maples et al. 2010 Study 2	134	UG	0; SOC	0	1; SCID-II	0	0	0	nr	nr	1	0	2
Martinez et al. 2007	94	UG	0; SOC	1	1; NPI	0	0	1	nr	nr	1	0	4
McIntyre et al. 2007	176	UG	0; SOC	0	1; NPI	0	1	1	nr	nr	1	1	5
Reidy et al. 2010	137	UG	0; SOC	0	1; NPI	0	0	0	nr	0	1	0	2
Svindseth et al. 2008	186	P	1; REP	1	0; NPI-21	0	0	0	nr	nr	1	1	4
Terrell et al. 2008	150	UG	0; SOC	0	1; NPI	0	1	0	0	nr	1	1	4

Twenge and Campbell 2003 Study 3	31	UG	0; SOC	0	1; NPI	0	1	1	0	nr	1	0	4
Twenge and Campbell 2003 Study 4	61	UG	0; SOC	1	1; NPI	0	1	1	0	nr	1	0	5
Vaillancourt, 2013 Study 1	176	UG	0; SOC	1	1; NPI	0	1	1	0	nr	1	0	5
Vaillancourt, 2013 Study 2	160	UG	0; SOC	1	1; NPI	0	1	1	0	nr	1	0	5
Warren et al. 2002	161	F	1;REP	1	1; NPI	1	0	0	nr	0	1	1	6
Wiehe, 2003	153	F	1;REP	1	1; HSNS	1	0	0	nr	nr	1	1	6

Note. 1=criteria fulfilled; 0=criteria not fulfilled; nr= variable not measured/reported. REP = Representative sample; SOC = Sample of Convenience; NPI= Narcissism Personality Inventory; MMCI= Millon Clinical Multiaxial Inventory; SCID-II= Structured Clinical Interview for DSM-III for axis II personality disorder; DSM-IV NPD; HSNS= Hypersensitivity Narcissism Scale

Evidence from clinical samples

Narcissism and aggression

Six of the seven studies using clinical samples found a significant relationship between narcissism and violence (Beasley & Stoltenberg, 1992; Cale & Lilienfeld, 2006; Coid, 2002; Svindseth, Nøttestad, et al., 2008; Warren et al., 2002; Wiehe, 2003). Three of these studies reported odds ratios. Coid (2002) found that those high in narcissism were over two and a half times more likely (OR=2.84) to be violent towards inmates and prison staff than those low in narcissism. Svindseth et al. (2008) found that those high in narcissism were only 20% more likely to be mildly/moderately violent (OR=1.21) but nearly eleven and a half times more likely to be severely violent (OR= 11.46). Warren et al. (2002) found that those with a narcissistic personality disorder (NPD) were nearly five times more likely to have been convicted for a violent crime excluding homicide (OR = 4.92), but were seven and a half times more likely to have been convicted of a violent crime including homicide (OR = 7.57). Thus, the findings of both Svindseth et al. (2008) and Warren et al. (2002) suggest that there is a stronger relationship between narcissism and more severe forms of violence.

Only one study did not find a significant relationship (Goldberg et al., 2007). They found no difference in narcissism between the aggressive group and non-aggressive group of psychiatric inpatients. However, the aggressive group had only twenty participants, which is the smallest sample size of any of the clinical studies and may therefore have been underpowered. Beasley and Stoltenberg (1992) found a significant difference between perpetrators of domestic violence and controls on the MCMI-II measure of Narcissism but not on the NPI. There is no obvious explanation for the inconsistency across measures. Both the NPI and the MCMI-II are based on the DSM-III criteria. However the NPI was designed to measure narcissism in the general population, whereas the MCMI-II measures pathological narcissism indicative of a narcissistic personality disorder. Thus, perhaps pathological narcissism is more related to violence.

Narcissism and aggression following an ego threat

No studies carried out with clinical populations examined the relationship between narcissism and violence following an ego threat.

Mediating variables

No clinical studies controlled for the effect of self-esteem, gender or previous violence.

Antisocial personality disorder/psychopathy. Coid (2002) was the only study that controlled for antisocial personality disorder and psychopathy. After controlling for the confounding effects of these, narcissism was a significant predictor of violence towards other

inmates and staff.

Gender. Although no studies controlled for gender it was possible to compare the results of studies that had all male samples to those with all female samples.. Three studies were carried out with a male only sample and each of these found a significant relationship between narcissism and violence (Beasley & Stoltenberg, 1992; Cale & Lilienfeld, 2006; Coid, 2002). Similarly, the only study that looked at a female only sample of inmates at a high secure unit also found a significant relationship between narcissism and violence (Warren et al., 2002). Furthermore effect size reported by Warren et al (2002) was comparable to studies with male only samples. This would suggest that in clinical samples the relationship between narcissism and violence is consistent across both genders.

Table 6: Summary of findings across all studies with clinical and student samples, in order of their quality rating

Is narcissism related to aggression and violence?				
Study	Association found: narcissism		Association found: narcissism and ego threat	Quality rating
	Y	N		
<i>Clinical Samples</i>				
Warren et al., 2002	Yes		-	7
Wiehe, 2003	Yes		-	6
Beasley and Stoltenberg 1992	Yes		-	5
Coid, 2002	Yes		-	5
Goldberg et al. 2007		No	-	5
Cale and Lilienfeld 2006	Yes		-	4
Svindseth et al. 2008	Yes		-	4
<i>Student Samples</i>				
McIntyre et al. 2007	Yes*		-	5
Terrell, Hill & Nagoshi, 2008	Yes		-	4
Reidy et al. 2010	Yes		-	2
Maples et al. 2010 Study 1	Yes		-	2
Maples et al. 2010 Study 2		No	-	2

Is narcissism related to aggression/violence following an ego threat				
Study Name	Association found: narcissism		Association found: narcissism and ego threat	Quality rating
	Y	N		
<i>Direct Aggression</i>				
Jones et al. 2010		No	Yes	7
Bushman et al. 1998 Study 1	Yes		Yes	6
Bushman et al. 2009 Study 1		-	Yes	6
Bushman et al. 1998 Study 2				
Kirkpatrick et al. 2002 Study 1		No	No	6
Kirkpatrick et al. 2002 Study 2		No	No	6
Barry et al. 2006	Yes		Yes	5
Bushman et al 2009 Study 2		-	Yes	5
Vaillancourt, 2013 Study 1		-	Yes	5
Vaillancourt, 2013 Study 2		No	No	5
Twenge and Campbell 2003 Study 3		-	Yes	4
<i>Displaced Aggression</i>				
Bushman et al. 2009 Study 1		-	No	6
Bushman et al. 1998; Study 2				
Twenge and Campbell 2003 Study 4	Yes		Yes	5
Martinez et al. 2007	Yes		Yes	4

- = Question not examined and/or reported on;

Shading = two papers reporting on same sample

*In McIntyre et al. 2007 relationship between narcissism and violence was only significant for the male sample not in the mixed gender sample.

Evidence from student samples

Narcissism and aggression

Five studies examined the relationship between narcissism and violence within a student population. Of these, three found a significant effect of narcissism (Maples et al., 2010; Reidy et al., 2010; Terrell, Hill, & Nagoshi, 2008), one study did not find an effect (Maples et al., 2010) and one did not find a significant relationship when analysis was carried out with a mixed gender sample (73% female) but when carried out with males only the relationship was significant (McIntyre et al., 2007).

Narcissism and aggression following an ego threat

Direct Aggression: Ten studies looked at the effect of an ego threat on the relationship between narcissism and direct aggression. In contrast to the above findings only two found a significant main effect of narcissism (Barry et al., 2006; Bushman & Baumeister, 1998), four found no effect (Jones & Paulhus, 2010; Kirkpatrick, Waugh, Valencia, & Webster, 2002; Vaillancourt, 2013) and four did not report on the main effect of narcissism (Bushman & Baumeister, 1998; Bushman et al., 2009a; Twenge & Campbell, 2003; Vaillancourt, 2013).

Seven studies found an interaction between narcissism and ego threat in that narcissism was related to increased aggression following negative feedback or insult (Barry et al., 2006; Bushman & Baumeister, 1998; Bushman et al., 2009a; Jones & Paulhus, 2010; Twenge & Campbell, 2003; Vaillancourt, 2013) Furthermore effect sizes were comparable across studies; four studies reported Pearson's r ranging from .25-.37. Three studies reported Beta, however variations in their analysis made it difficult to directly compare these results.

Three studies that found no effect (Kirkpatrick et al., 2002 Vaillancourt, 2013) two were carried out by Kirkpatrick et al. 2002. Although Kirkpatrick's studies had a relatively high quality rating, both used the same methodology and defined aggression as quantity of hot sauce allocated to opponent's food. Similarly Vaillancourt's study, which had a relatively low quality rating, used student evaluations of teaching as a measure of aggression. In contrast the studies that did find an effect predominantly used administration of noise blasts as a measure of aggression. As suggested previously, this may indicate a difference in effect based on the type or severity of the form of aggression.

Six studies found that in the presence of positive feedback, narcissism was unrelated to violence (Barry et al., 2006; Bushman & Baumeister, 1998; Bushman et al., 2009a; Jones & Paulhus, 2010; Vaillancourt, 2013) and one study found that there was a significant relationship between narcissism and violence following positive feedback (Bushman et al., 2009a). Bushman had a relatively high quality rating and the largest sample size of studies looking at positive feedback, which may account for why the effect reached significance.

Displaced Aggression Three studies looked at displaced aggression and narcissism in the presence of an ego threat. Two found a main effect of narcissism (Martinez, Zeichner, Reidy, & Miller, 2008; Twenge & Campbell, 2003) and one did not report on the main effect (Bushman et al., 2009a). Two studies found that narcissism significantly predicted displaced aggression following an ego threat (Martinez et al., 2008; Twenge & Campbell, 2003); one study found no such relationship (Bushman et al., 2009a). The reason for this inconsistency is difficult to determine. Each of these studies used the same measure of aggression (noise blast) and a similar experimental design. In terms of methodology Bushman had a larger sample size and the highest quality rating of the three studies, perhaps making this finding more reliable.

Mediating variables

Gender: Four studies with mixed samples reported on the effect of gender. Both of Twenge and colleagues' (2003) studies did not find a significant interaction between narcissism and gender. Their samples were 48% and 49% female respectively and they used the administration of noise blast as a measure of violence. In contrast McIntyre and colleagues (2007) found no significant relationship between narcissism and aggression when analysis was carried out with a mixed gender sample (73% female) but found a significant relationship when only the male sample was analysed. Similarly Terrell and colleagues found that when the sample was split by gender there was a significant correlation between narcissism and aggression amongst males but not females. Again there was a difference in how aggression was measured across these four studies. Both studies by Twenge and colleagues (2003) used the administration of an noise blasts as a measure of aggression whilst both Terrell et al. (2008) and McIntyre et al. (2007) used attacks during a competitive computer games as a measure of aggression. This may suggest a gender difference in type of aggression or conditions under which it will be expressed.

Self-Esteem: Ten studies adequately controlled for self-esteem. Of these eight found that it did not account for the relationship between narcissism and violence alone or in the presence of an ego threat (Bushman & Baumeister, 1998; Bushman et al., 2009a; Jones & Paulhus, 2010; Martinez et al., 2008; McIntyre et al., 2007; Twenge & Campbell, 2003).

In contrast, Kirkpatrick and colleagues' (2002) first study did not find a main effect for narcissism but after controlling for self-esteem found it negatively predicted aggression. In a second replication study they found a significant positive relationship between narcissism and aggression before controlling for self-esteem and no relationship when self-esteem was added to the equation. As there were no differences in methodology between the original and replication study, it would suggest that the original result was an anomalous finding. It is also possible that this may indicate that the allocation of hot sauce, used by Kirkpatrick as a measure of aggression is not a reliable measure.

Antisocial PD/Psychopathy: Jones and Paulhus (2010) was the only study to control for measured psychopathy. They allowed it to compete with narcissism in a regression analysis and no main effect for narcissism or psychopathy. However the interaction between narcissism and ego threat was significant, whilst the interaction between psychopathy and ego threat was not significantly related to aggression.

Discussion

The findings from this review suggested that narcissism is relevant in understanding aggression and violence. Studies with clinical samples consistently (6 studies out of 7) found narcissism to be related to violence. Similarly, evidence from student samples also provided support for a relationship between narcissism and increased aggression. Thus, this result does not appear to be an artefact of studying very violent samples or student samples.

Based on the evidence from student samples it is difficult to conclude if narcissism leads to increased aggression overall or if it is only in the presence of an ego threat. Four of the five studies examining the relationship between narcissism and aggression only found a significant relationship. In contrast, studies looking at narcissism and aggression following an ego threat did not consistently find a main effect for narcissism (2 out of 6 found a significant effect). There was however substantial evidence for the relationship between narcissism and aggression following an ego threat. Seven of ten studies found narcissism to be related to aggression following an ego threat. Whilst narcissism was related to aggression following negative feedback, studies consistently (6 out of 7) found no link between narcissism and aggression following positive feedback. It is unclear whether this is because positive feedback negates the effect of narcissism on aggression or an ego threat is necessary to produce a relationship. There is some limited evidence to suggest that narcissism also led to increased displaced aggression following an ego threat. However these findings are less robust as only three studies explored that relationship and findings were mixed. None of these results were not accounted for by self-esteem, supporting the view that narcissism offers something additional to understanding the impact of ego threat on violence and aggression.

The findings of this review suggest that results may vary based on the type of aggression being studied or the means by which it is recorded. Evidence from clinical studies indicates that narcissism is more strongly related to severe violence (Svindseth et al. 2008; Warren et al. 2000). In relation to student samples, studies that did not find an effect of narcissism and violence following an ego threat differed in how aggression was assessed. Two used allocation of hot sauce as a measure of aggression, whilst the other used student evaluations of teaching. In

contrast, the majority of studies that found an effect defined aggression as duration and intensity of a noise blast administered to opponent.

Limitations of the literature

No clinical studies to date have adequately controlled for previous violence and gender and only one study controlled for psychopathy. All of which are known predictors of violence. Similarly studies with students did not adequately control for confounding variables such as previous violence or gender.

Another limitation of this research body relates to the measurement of narcissism, most commonly the NPI. The majority of studies used self-report measures of narcissism. As with all self-report measures, it is open to impression management, meaning that individuals may tailor their responses by giving socially desirable answers. In addition there is some evidence from this review that different measures of narcissism might give different results. For examples This may be because of the different emphasis some measures place on aspects of narcissism. The Hypersensitivity Narcissism Scale (HSNS; Hendin & Cheek, 1997) which focuses more on symptoms of vulnerability and hypersensitivity, whilst the NPI and SCID-II, which focus more on boisterous, self-aggrandizing, vain, and interpersonally exploitative behaviour (Hendin & Cheek, 1997; Wink, 1991). This is indicative of the complex and multifaceted nature of narcissism. There is still a debate about the factors that make up narcissism. Studies using the NPI for example have disagreed on the number of subscales. In two validation studies, Emmons (1984, 1987) suggested a 37-item, forced-choice format with four subscales: leadership/authority, self-admiration/self-absorption, superiority/arrogance, and exploitiveness/entitlement. In contrast Raskin and Terry (1988) argued for a 40-item, forced-choice measure with seven subscales: authority, exhibitionism, superiority, entitlement, exploitativeness, self-sufficiency, and vanity. There have also been wider issues around the validity of the NPI (See Brown, Budzek and Tamborski, 2009). This area of research would benefit from addressing some of the difficulties in defining and measuring narcissism.

Similarly research validating different measures of violence/aggression would be of value. Based on the findings of this review the use of a noise blast or electric shock seemed to give the most consistent results whilst results of studies using the application on hot sauce

Strengths and limitations of this review

The strengths of this systematic review are that it was comprehensive, structured and protocol driven with an explicit methodology. Nineteen papers reporting on 24 studies were

included from a wide geographical area. The review team included clinical researchers so practical recommendations were considered in this context.

This study excluded grey literature, which increases the risk of publication bias as published studies tend to have larger effect sizes. Cochrane review protocols recommend that grey literature is included but this recommendation related to reviews of randomized controlled trials, which are of a superior methodology than correlational and cross-sectional studies included here. Therefore, on balance, it was decided to prioritise quality of methodology and exclude grey literature but the limitations of this decision are acknowledged.

Implications for clinicians and policy makers

The results of this review indicate that narcissism is a helpful construct in understanding violence and be a fruitful alternative to examining self-esteem. The findings also support the cognitive behavioural model of violence, which suggests that negative core beliefs, about being weak or vulnerable for example, are hidden by a veneer of confidence and arrogance (narcissism). These beliefs become activated in situations where the individual receives an ego threat leading to the experience of anxiety and embarrassment by someone deserving of punishment. Dysfunction assumptions such as “embarrassment is a sign weakness” and “to be strong you must fight”, lead the person to behave aggressively or violently in order to protect against further injury (humiliation) and the perceived lowering of self-worth and pride (Walker and Bright, 2009b). The findings from this review particularly those demonstrating a relationship between narcissism and aggression following an ego threat, provide support this model in that those with high levels of narcissism were more likely to act aggressively following an ego threat than those who low in narcissism.

Factors that mediate the effect are of significant interest. The difference in aggression following positive or negative feedback might suggest the rehabilitation programmes that seek to build more realistic and stable self-esteem may be helpful in reducing violence, whilst programmes or approaches that are perceived as an ego threat may result in an increase in violence amongst those high in narcissism. Prison staff and clinicians working with violent individuals who are high in narcissism should be aware of this potential relationship. The nature of narcissism is likely to leave other feeling that the individual needs to be ‘brought down a peg or two’ though based on the findings this is likely to increase aggression and violence. This may be a helpful factor to consider in risk assessment protocols. However many of these implication are speculative and based studies with students. This has been extrapolated from studies with undergraduates and requires confirmation with clinical samples. This also highlights the need for experimental studies with clinical samples.

Implications for future research

Future studies would benefit from addressing a number of methodological issues. This could be achieved by adequately controlling for confounding variables such as previous violence, the presence of psychopathy or antisocial personality disorder and gender. All of which are known predictors of violence.

All the studies looking at the relationship between narcissism and violence following an ego threat were carried out with a student population. As stated previously, there are problems with generalizing findings based on student samples (Peterson, 2001) and although there is strong evidence of a relationship between narcissism and violence in forensic populations, the extent to which situational factors (e.g. ego threat) are important in precipitating aggressive or violent behaviour in the presence of high narcissism is unknown as such violent acts may or may not have been the result of an ego threat. Conducting research in prisons presents a number of challenges, including negotiating the regulatory, research and ethical frameworks required by the prison service, as well as the logistical difficulties of accessing prisons and prisoners. However, although challenging to both design and execution, it would be a valuable avenue for future research.

Future research might also focus on testing out other assumptions made by the cognitive model of violence (Walker and Bright, 2009b). As mentioned it is suggested that dysfunction assumptions such as “embarrassment is a sign weakness” and “to be strong you must fight” lead someone to respond aggressively and thus may mediate the relationship between narcissism and violence. In line with this a previous study found that *machismo* beliefs was significantly related to both the number of past violent criminal convictions and institutional violence whilst beliefs about the acceptability of violence was significantly related to institutional violence (Warnock-Parkes, Gudjonsson & Walker, 2008). However no studies to date have examined this. This would be a helpful avenue for future research in order to build up a more complete picture of the mechanisms underpinning violence and test out other assumptions put forward by the cognitive model of violence.

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Service Improvement Project:
Supporting the Transition to University of Students with Autism
Spectrum Disorder

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This journal was chosen because it publishes research of direct and practical relevance to help improve the quality of life for individuals with autism or autism-related disorders.

Introduction

Autism Spectrum Disorders (ASD) are developmental conditions, which manifest as qualitative impairments in reciprocal social interaction and communication, and a repetitive or restricted pattern of interests, behaviours and activities. ASD occurs in approximately 1% of the population (Centers for Disease Control and Prevention, 2010; Office of National Statistics, 2005). Approximately 50% of those with ASD have average or above average intelligence. However, outcomes in adulthood are poor amongst this group. Studies have consistently shown that young adults with ASD are more likely to be unemployed (Taylor & Seltzer, 2011) and just a minority (12%) move to independent living (Howlin, 2000). Furthermore, despite a high proportion of individuals with ASD reporting an aspiration to attend university (White, Ollendick, & Bray, 2011), many either do not seek or gain entry into university or drop out prematurely (Glennon, 2001; VanBergeijk, Klin, & Volkmar, 2008). This has been attributed to social isolation, difficulty adjusting to the change in routine and problems living independently away from home (Howlin, Goode, Hutton, & Rutter, 2004; Jobe & White, 2007).

Legislation introduced in the UK such as the Disability Equality Act, (Office for disability issues, 2010) and the Special Educational Needs and Disability Act 2001 (HM Government, 2001) called for higher education (HE) institutions to make reasonable adjustments so as to prevent a disabled person being placed at a substantial disadvantage. This has led to a number of studies looking at the experience of university students with a disability and the types of adjustments that might be helpful. The majority of intervention programs that have published outcomes have focused on generic support for all students, or have failed to distinguish between disorders such as ASD, specific learning disorders and attention-deficit/hyperactivity disorder (e.g. Chiba and Low 2007; Gardiner, Mulry and Chalikh 2012). Although these studies have been helpful in informing policy and practice in relation to those attending university with a disability, universal support packages may not meet the needs of students with ASD who may require more individualised provisions (Breakey 2006; Smith 2007).

Studies have demonstrated an increase in the awareness amongst HE institutions of the needs of students with ASD and there has been an increase in the number of universities and HE institutions providing support for those with ASD (Barnhill, 2014; Hastwell, Harding, Martin, & Baron-Cohen, 2013; Smith, 2007). However, interventions are varied and, although a number of papers have provided recommendations (Hastwell et al., 2013; VanBergeijk et al., 2008), currently there is insufficient evidence base to guide best practice. A recent systematic review highlighted that there is a scarcity of research concerning the experiences of college students with ASD (Gelbar, Smith, & Reichow, 2014). It also emphasised the need to move from theoretical suggestions to empirically based recommendations.

However, life at university presents a number of dynamic challenges for students with

ASD and the types of support required are likely to change at different times in the academic year (e.g. fresher's week to exam time) and across their time at university (first year to final year). It can therefore be difficult to decide where to focus research initially. The 2001 report of the National Research Council, *Educating Young Children with Autism*, emphasized that times of transition were critical times in the lives of those with ASD. Among students without ASD, Pancer and Hunsberger (2000) found an indirect relationship between students' stress level prior to enrolling in a university and their adjustment six months later. As those with ASD have tremendous difficulties, without preparation they would predictably fare far worse than students without ASD in their transition to university. Furthermore, the Interagency Autism Coordinating Committee (IACC, 2012) has targeted transition programs for adolescence with ASD as a priority for research.

This study aimed to evaluate the usefulness of a transitional intervention, a residential summer school, in addressing transition related stress. The study proposed to do this in two ways: (i) evaluate student satisfaction with the intervention and the degree to which it reduced worries associated with going to university; and (ii) consider whether the content of the intervention was appropriate to the needs of the students or could be improved to meet their needs, i.e. stated worries about transition more effectively.

Method

Participants

Twenty-five individuals attended the Autism Summer School at the University of Bath. Of those who attended, 100% consented to take part in the current study. Participants were deemed eligible if they had a diagnosis of ASD and were due to start University in the next twelve months. ASD diagnosis was confirmed using an informant report on developmental history (SCQ) and a self-report of current symptoms (RAADS-R). Scores on both measures were significantly above the clinical cut-offs (mean SCQ score = 18.95 (SD = 5.76); $t(21) = 3.22$, $p = .004$) and mean RAADS-R score = 116.13 (SD = 26.86); $t(23) = 9.33$, $p < .001$).

Procedure

The current study employed a repeated measures mixed method design. All participants referred to the summer school were sent an information sheet, consent form and pack of

questionnaires (listed below). Students then attended a three-day intervention. Then following completion of the Summer School participants were asked to re-rate the worries they identified in the PTUQ.

Measures

Diagnostic

1. Diagnostic Information

Clinical Diagnosis of ASD was required to confirm eligibility for attendance at the summer school. Diagnostic information was supplemented by:

- a. The Ritvo Autism Asperger Diagnostic Scale-Revised, (RAADS-R; Ritvo et al., 2010). The RAADS-R is an 80 item self-report measure enquiring about the core characteristics of ASD with four subscales, social relatedness, sensory-motor, circumscribed interests and social anxiety. It has been shown to have good concurrent validity with the Constantino Social Responsiveness Scale
- b. Social Responsiveness Scale, (SRS; Constantino & Gruber, 2007). The SRS is a 65 item parent/teacher report scale that considers severity of ASD symptoms across a number of dimensions. It has good inter-rater reliability and concurrent validity when compared with the Autism Diagnostic Interview-Revised (ADI-R)

2. Measures of Emotional Well-Being

- a. Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The HADS is a self-report questionnaire comprising of a 14 item, four-point Likert-scale covering anxiety (HADS-A) and depression (HADS-D) over the past 2 weeks. It has been extensively validated and widely used in clinical practice and research (Snaith, 2003) and used previously in studies of young people and adults with ASD (Blackshaw, Kinderman, Hare, & Hatton, 2001).
- b. Warwick-Edinburgh Mental Well-Being Scale, (WEMWBS; Tennant et al., 2007). The WEMWBS is a self-report comprising of 14, five-point Likert-scaled items measuring emotional wellbeing. It has been validated for the UK population and adopted by the Scottish Health Survey and the Health Survey for England.

3. Transition to University Questionnaires

At the time this study was carried out there were no measures that examined the worries of students transitioning to university. As such a measure was developed.

- a. The Transition to University Questionnaire (TUQ) was developed for the present study (See appendix 1). The purpose of this measure was to ascertain the types of worries and degree of worry experienced by students with Autism transitioning to university. A major criticism in the literature is that interventions are typically assessed using a top down approach i.e. that the criteria for deciding if an intervention is effective is defined by professionals with little consultation with those with Autism. As such it was decided that the summer school would be evaluated on how well it addressed worries as identified by the attendees themselves. As such an open format semi-structured questionnaire was designed through discussions with experts in the field of Autism (Dr Ailsa Russell and Dr Mark Brosnan) and in consultation with a person with personal experience of Autism studying at the university of Bath. The questionnaire was piloted with someone with Autism to check comprehensibility. The questionnaire asked students to list any concerns they have about starting university and to rate the intensity of worry for each listed concern using a five-point Likert scale on which 1 = not worried and 5 = extremely worried. There was also a final item where students were asked to rate how positive they felt about attending university on a five-point scale.
- b. Follow up Transition to University Questionnaire (see appendix 2). This questionnaire aimed to assess any change in the worries listed by students before attending the summer school. As such each student had an individualised questionnaire that was auto-populated with the worries they had listed in the TUQ (above). Students were asked to re-rate these worries. The follow-up questionnaire also asked students to rate how much they enjoyed the summer school and how helpful they found it on a five-point Likert scale.

4. Qualitative feedback

- a. Participants were provided with free text space to give qualitative feedback on what they found helpful about the summer school and how they think it could be improved.

Intervention

The intervention was entitled ‘*An Introduction to University Life: Summer School for Students on the Autism Spectrum*’. The aim of the intervention was to provide students with ASD with a taster experience of University life in preparation for transition. The intervention comprised a residential summer school, held on the campus of the University of Bath over three days and two nights. It included a structured programme of events about academic, social and leisure aspects of university life, and information about student support services and emotional well-being. Events included workshops, lectures, small group sessions and taster sport sessions. Evening activities alternated between meeting in the bar to discuss issues around alcohol and socialising and a task comprising working in small groups in student accommodation to order take-away food. University lecturers, including clinical psychologists, delivered the summer school programme and student ambassadors facilitated evening events and breaks. These were current undergraduate students at the University trained to provide student support at open days, summer schools and other events. None of the student ambassadors had any health or social care training or specialist expertise in working with people with ASD. They were provided with a two-hour information and training session about Autism prior to the commencement of the intervention. The student ambassadors, in addition to facilitating the students with ASD, were also able to provide a peer-mediated account of university life.

Data Preparation and Analysis

Quantitative analysis: The responses (concerns generated) from the PUTQ were quantified for analysis. Responses with a shared meaning were grouped together; each category was coded as a different variable (see table 3). To increase inter-rater reliability, two researchers did this independently with discrepancies resolved through discussion with a third researcher. Change in ratings of worry from before to after the Summer School were analysed using *Wilcoxon Signed Rank Test*. This included the change, if any, in the overall rating about starting university.

In order to assess the appropriateness of the content of the summer school, each worry listed by the students was also categorised as being either explicitly covered by the programme (green), briefly covered, i.e. discussed but not in detail (orange), or not covered (red; table 3). Again two researchers did this independently and any discrepancies resolved through discussion with a third researcher.

Qualitative analysis: The free text qualitative feedback from the evaluation questionnaire (i.e. on what they found helpful about the summer school and how they think it

could be improved) was analysed in MAXQDA11 (VERBI Software, 2014) a software programme that aids the coding of themes in qualitative analysis. Qualitative feedback was analysed using thematic analysis as recommended by Braun and Clarke (2006). The transcripts were read several times and codes were identified that were considered pertinent to the research questions. The whole data set was given equal attention. From these codes, themes were defined based on larger sections of the data by combining different codes that were similar or may have been considered the same aspect within the data. All initial codes relevant to the research question were incorporated into a theme. At this point, any themes that did not have enough data to support them or were too diverse were discarded. This refinement of the themes took place on two levels, primarily with the coded data ensuring they formed a coherent pattern, secondly once a coherent pattern was formed the themes were considered in relation to the data set as a whole. This ensured the themes accurately reflected what was evident in the data set as a whole. Once a clear idea of the various themes and how they fitted together emerged, themes were defined and named. Finally, examples from transcript were chosen to illustrate elements of the themes. This process was checked by an independently by another researcher.

Results

Characteristics of the sample

Twenty-five students attended the summer school attended the Autism Summer School in 2013. The summer school attendees were predominantly male (82.6%) with ages ranging 16 to 21 years. ($M=18.04$, $SD=1.43$). Demographics are displayed in Table 1.

Table 1: Descriptive and clinical information of attendees of the Autism Summer School

	N (%)
<i>Demographics</i>	
Gender	
Male	20 (80)
Female	5 (20)
Ethnicity	
Caucasian	24 (96)
Asian/Pacific Islander	1 (4)
Course	
Math	2 (11)
Natural science	5 (28)
Computer science	2 (11)
Engineering	2 (11)
Arts	3 (17)
Game art	1 (5.6)
History	1 (5.6)
Education	1 (5.6)
Language	1 (5.6)
<i>Psychological Measures</i>	
RAADS-R	116.13 (26.86)
SRS	18.95 (5.76)
HADS Anxiety	7.67 (4.20)
HADS Depression	4.38 (2.36)
WEMWBS	46.13 (8.21)

RAADS-R= Ritvo Autism Asperger Diagnostic Scale-Revised; SRS= Social Responsiveness Scale; HADS=Hospital Anxiety and Depression Scale; WEMWBS= Warwick-Edinburgh Mental Well-Being Scale

Worries about University transition

The number of worries listed by each attendee ranged from 2 to 6 (Mean number of worries=4.26; $SD=1.39$). For the purpose of analysis these were grouped according to themes comprising: (i) worries about the social aspects of university life; (ii) worries about leaving home; (iii) worries about the academic course; (iv) worries about specific, concrete aspects of self-care and (v) general concerns about self-care and support. Social concerns were the most

commonly endorsed worry (see table 2) and was rated as the most intense. The components of each theme are illustrated in table 3.

Evaluation of the Summer School

Twenty-two (88%) participants completed the follow up questionnaires evaluating the Summer School.

(i) *Student satisfaction*

There was a significant change in the ratings of participants' feelings about starting university ($z=2.07, p < .05$) with a medium effect size ($r=0.3$). Following attendance at the summer school, the percentage of students who reported feeling positive about starting university increased from 47.82% to 73.91%.

The Summer School was rated as 'extremely helpful' by 39% of the students and 'slightly helpful' by 61% of the students. No student rated it as unhelpful. The Summer school was rated as 'extremely enjoyable' by 44% of the students and 'slightly enjoyable' by 56%. No student rated it as 'not enjoyable at all'.

(ii) *Reduction of worries*

A Wilcoxon Signed Rank Test revealed a statistically significant reduction in worries relating to socializing following participation in the summer school ($z=3.346, p<.001$) with a large effect size ($r=0.46$). Worries relating to the course, leaving home, concrete self-care and abstract self-care did not change significantly (Table 2).

Table 2: The number of worries listed by participants within each category and the mean rating of their degree of concern before and after the summer school.

Worry	Pre Summer School		Post Summer School		P
	N	Median (Range)	N	Median (Range)	
Leaving Home	12	2 (1-5)	11	3 (1-5)	.227
Concrete Self Care	26	3 (1-4)	25	3 (1-4)	.358
Abstract Self Care	10	3 (2-5)	7	2 (1-3)	.18
Course	23	3 (1-5)	22	3 (1-5)	.913
Social*	29	3 (1-5)	29	3 (1-5)	.001

Notes: * denotes $p<.05$

iii. Appropriateness of the content

Table 3: The categorisation of worries listed by participants in the University Transition Questionnaire. Green indicates topic was explicitly covered; Orange denotes that it was briefly covered and Red denotes that it was not covered by the programme.

Social	Leaving Home	Course	Self Care, Specific	Self Care, General
Making friends	Homesickness	Losing interest in subject	Living on a budget	Work life balance
New people	New Place	If work is hard	Managing money	Independence
Getting on with other people	Missing family	Amount of academic work	Finding way around	Will I handle it
What will people think of me	Living away from home	Succeeding	Buying and cooking food	Developing an ego
Getting on with flat mates	Losing contact with friends from home	Managing workload e.g. deadlines	Getting a part time job	Getting support
Fresher's week		Academic failure	Using public transport	Coping with everyday problems and challenges
Social skills		Workload	Routine	
Finding it difficult to fit in		Taking lecture notes	Time management	
Getting to know students		Enjoying the course		
Groups of people		If I picked the wrong course		
Relationships		Paying attention in lectures		
Team work		Stress relating to work		
Bullying		Staying motivated		
Being a social outcast		Falling behind in work		
Socialising		Professors style of teaching not working well for me		
		Learning new things		

iv. Qualitative feedback from summer school

In addition to the numerical ratings on items evaluating the summer school, students were also invited to provide additional comments and suggestions in open text boxes on the questionnaire. Five main themes emerged from the qualitative feedback in response to what students found the most helpful about the summer school. These are displayed in Table 4. Students were also asked about what could be improved. Eight themes emerged from this feedback (see Table 5)

Table 4: Feedback from students on what students found helpful

Theme	Quotes
Normalising	<i>The group discussion sections were helpful because they make me realise that I am not the only one like me (P1)</i> <i>Meeting others in a similar situation (10)</i>
A Taste of University Life	<i>Being able to experience certain aspects of life I will have to get used to at uni (13)</i>
Anxiety management and coping Skills	<i>Lessons on anxiety control and learning to look after yourself (P6)</i> <i>The managing social anxiety bit it has helped a lot (P19)</i>
Developed Social Skills	<i>Social and cultural aspects of student life - tips on how to get the best of fresher's week, how to get on with flatmates (P16)</i>
Friendly Atmosphere and Staff	<i>Social atmosphere (P12)</i> <i>The lovely helpful staff are very approachable and helped with everything (P16)</i>

Table 5 Feedback from students on how could the summer school be improved?

Theme	Quotes
Some activities could have been better organised	<i>The shopping and cooking activity didn't have the proper equipment (P1)</i> <i>sometimes seemed ambassadors didn't know what to do (P2)</i>
More time on social skills	<i>more work on friendship skills (P19)</i>
More time discussing Autism and diagnosis	<i>More time for focus group on ASD disclosure (P18)</i> <i>More focus could have been on talking about autism (P8)</i>
Difficulties with sporting activities	<i>Sport stuff reminded me of PE (not good) (P4)</i> <i>Not really interested in sports (P16)</i>
More free time to explore the university	<i>maybe make more free time to explore (P5)</i> <i>more free time to explore (P2)</i>
More activities	<i>A taster of societies (P14)</i> <i>There could be more interactive activities (P13)</i>
Academic session	<i>Was the academic interaction session was interesting it wasn't very helpful (P9)</i>
Extending the sessions and length of the summer school	<i>Extend the summer School to a week or more would be good (P20)</i> <i>Longer e.g. five days and longer sessions. Fewer a day but longer (P19)</i>

Discussion

The results indicate that the summer school was helpful in improving participants outlook on starting university with over three quarters reporting feeling positive about it following the summer school. The summer school was also effective in reducing the amount of concern reported by prospective students about the social aspect of university, which was the most widely reported concern. This was also reflected in the qualitative feedback with many students highlighting the social skills workshops as being helpful, although students did request even more focus on social skills and complex issues around socialising such as disclosing your diagnosis. This suggests that students with ASD are aware of the social challenges of university and also their own deficits in negotiating these challenges.

Historically, it was thought that those with ASD were not motivated to have friendships and preferred to be alone (Hobson & Lee, 1998; Kanner, 1942). However, recent studies have challenged this idea (Bauminger & Kasari, 2000; Bauminger, Shulman, & Agam, 2003). Whitehouse and colleagues (2009) found individuals with AS displayed higher levels of loneliness and depressive symptoms than their peers, with loneliness predicting depressive symptoms. Similarly, Connors (2007) suggested students with high functioning ASD are at increased risk of developing anxiety due to having awareness that they are different and have social weaknesses. Anxiety and depression can have a debilitating effect on academic performance and level of adjustment to university life (Andrews & Wilding, 2004; Pancer, Hunsberger, Pratt, & Alisat, 2000). However, these findings illustrate that students are not only motivated to improve their social skills but that interventions such as this can improve student confidence in facing the social challenges of university. Further research will be needed to examine the long-term impact of this transitional intervention on socialising and building friendships at university. It is likely that these students will require on-going support with socialising at university (see appendix 3) for a more detailed exploration of social needs of those with ASD transitioning to university).

Despite an overall downward trend in severity of worries, the summer school did not effectively address concerns about leaving home, academic demands and concrete or abstract self-care. Again this was reflected in the qualitative feedback provided by participants. Analysis of the appropriateness of the content (Table 3) illustrated that the programme did not explicitly address many of the concerns listed in these four categories. Therefore, efficacy could be improved by tailoring the summer school intervention to the specific worries highlighted. A number of recommendations on how this might be achieved can be seen in Table 6.

Table 6: Recommendations for improving the Summer School

Recommendations
<ul style="list-style-type: none">• Providing more sessions relating to social skills and building friendships• Provide time for discussions about Autism, it's impact and disclosing your diagnosis at university• Provide advice and practice problem-solving skills in relation to academic challenges such missing a deadline, not understanding the lecturer or not liking your course.• Provide more unstructured time for students to explore. It would also be closer to the university experience as students are likely to have a number of unstructured periods at university.• Covering skills on budgeting (e.g. introducing money management apps) and managing money at university.• Provide advice on part-time jobs at university and signposting to where you might get support with this e.g. careers service• Provide more time to explore the university and surrounding city as well as an opportunity to familiarise students with public transport and layout.• Providing more information about non-sporting societies and clubs at the university and to also provide taster sessions of these as an alternative for those who are not interested in sports.

Transition is unlikely to be a discrete time point but rather an on-going process as the student moves through university life. The summer school was designed to prepare students and give them a base skill set to begin that process. It is unlikely that worries about adjustment to university and the accompanying demands would be completely irradiated through a single intervention but would require on-going support. More research into the types of long-term support would be helpful in facilitating successful transition and adjustment to university is necessary (see appendix 3). Longitudinal studies are also necessary to understand what interventions and supports are helpful in practice and if these differ at different times.

This study is among the first to evaluate a transitional intervention for students with ASD attending university. Furthermore, this intervention was evaluated based on worries as identified by the students themselves. This was seen as important firstly because there has been little research looking at what students with ASD view as challenging about starting university and what support they feel would be helpful in preparing them, and secondly because previous studies have highlighted discrepancies between what is viewed as helpful by university staff and by students with ASD (Knott & Taylor, 2013; Simmeborn Fleischer, 2011; White et al., 2011). As such, services may be failing to fully understand the needs of this group, thereby limiting the effectiveness of any interventions provided.

This study does have a number of limitations. The sample size in this study is small and may not be a representative. It is possible that students who elected to attend the summer school

were more able and motivated. Furthermore, the summer school was held at a University that is a well-regarded, research-intensive institution with high entry-level requirements. As different universities attract students with different interests and aspirations, they may need to provide different types of support. The measure used in this study was designed for the purpose and has therefore not been tested for reliability and validity. Furthermore focus groups or individual interviews may have been a more effective method for assessing the effectiveness of the summer school as it would have given a more detailed account of participant's experience. However this was not feasible due to time restraints and a lack of resources e.g. researcher time. Finally, this study does not provide any longitudinal data so it is uncertain how helpful this intervention was in helping students adjust to university.

Changes resulting from service improvement project

The findings and recommendations were fed back to the lead clinician who developed and organised the summer school. Findings were also integrated into a report for the Alumni who had partly funded the summer school. Based on the outcomes, as well as the apparent demand for this type of intervention, the Summer School secured funding to be held again in 2014. A number of changes were made based on this study, such as longer time being allotted to workshops on socialising and developing friendships, and the addition of a workshop on disclosing your diagnosis.

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Main Research Project
Beliefs in Compulsive Hoarding: A pilot study of their
development over time

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on anxiety disorders*

Introduction

Compulsive hoarding (CH) is characterised by the accumulation of, and failure to discard, a large number of objects of seemingly little value to the point that living spaces can not be used for their intended purpose (Frost & Hartl, 1996). Historically thought to be a variant of Obsessive Compulsive Disorder (OCD) or Obsessive Compulsive Personality Disorder, CH has recently been recognised as a distinct diagnostic category (Hoarding Disorder) within the DSM-5 (American Psychiatric Association, 2013).

Probably the best-articulated theoretical approach to understanding hoarding is the hybrid deficit-cognitive-behavioural model developed by Frost and his colleagues (Frost & Hartl, 1996; Steketee & Frost, 2003). This model proposes that hoarding arises from an interaction between information processing deficits and maladaptive beliefs, which gives rise to emotional distress and avoidance. The beliefs identified by this model included emotional attachment, memory-related concerns, desire for control, and responsibility. Neuropsychological examinations of CH have identified deficits in non-verbal intelligence (Grisham, Brown, Savage, Steketee, & Barlow, 2007), attention (Hartl, Duffany, Allen, Steketee, & Frost, 2005), memory (Hartl et al., 2004), planning (Grisham, Norberg, Williams, Certoma, & Kadib, 2010) and decision-making (Lawrence et al., 2006), though many of these findings have not yet been replicated and the link between any deficits and the psychopathology of hoarding itself is at best unclear.

Other authors have placed greater emphasis on the maladaptive beliefs associated with CH. Seaman, Oldfield, Gordon, Forrester and Salkovskis (2010) have suggested that CH is driven by maladaptive beliefs about objects including: (i) harm avoidance where objects are acquired and not discarded to prevent potential danger to self or others; (ii) fear of material deprivation where the individual hoards objects due to a fear of being deprived of belongings and (iii) attachment disturbance where the individual feels significantly emotionally attached to a belonging so that its loss would be experienced as a severe personal loss. There is both research and clinical evidence consistent with the presence of these cognitive factors. Those who hoard are also more likely to have difficult attachment histories (Nedelisky & Steele, 2009; Shafran & Tallis, 1996) and express greater levels of emotional attachment or “hypersentimentality” to their possessions (Frost & Hartl, 1996; Frost, Hartl, Christian, & Williams, 1995; Gordon, Salkovskis, & Oldfield, 2013). They are more likely to have experienced material deprivation in childhood (Landau et al., 2011; Samuels et al., 2008) as well as childhood adversities such as a lack of security from home break-ins and parental psychopathology, which may contribute to material deprivation (Samuels et al., 2008).

Although some progress has been made, understanding the beliefs associated with hoarding is challenging due to the apparently paradoxical nature of hoarders relationship with

their possessions. Unlike OCD, those who hoard view their behaviours as ego-syntonic, meaning they are acceptable to the person and in line with their desires and goals. Kellett (2007) argued, although the “micro” behavioural symptoms of hoarding may be ego-syntonic (i.e. the retention of a broken cup), there are “macro” ego-dystonic negative emotional consequences resulting from these behaviours. In line with this those who hoard report a number of positive associations and consequences of hoarding. Possessions are often described as offering a sense of comfort and security (Kellett, Greenhalgh, Beail, & Ridgway, 2010), providing anchors to valued memories (Kellett, 2006), and the acquisition of new possessions results in a “high” or positive emotional boost (Wheaton, Abramowitz, Franklin, Berman, & Fabricant, 2010). In addition, those who hoard describe deriving a sense of identity from their possessions (Kellett et al., 2010). However, this conceptualization is similar to the notion of “logical but costly” behaviour, which characterizes most non-psychotic psychological problems.

These positive elements may contribute to the development of hoarding and subsequently help to maintain the problem due to their reinforcing nature. However, as clutter accumulates hoarding can have a profoundly negative impact on the individual and their wider network. Hoarding is associated with social isolation (Frost et al., 2000; Steketee et al., 2001; Frost & Gross, 1993), high levels of family conflict and distress (Drury et al., 2014), significant impairment in employment (Tolin, Brady, & Hannan, 2008) and high rates of comorbidity compared to other disorders (Frost, Steketee, & Tolin, 2011; Leckman, Mataix-Cols, & Rosario-Campos, 2005). The accumulation of clutter can also have significant individual and public health risks such as fire, falling, vermin infestation and food contamination (Frost, Steketee & Williams, 2000), sometimes culminating in eviction or removal of children (Tolin et al., 2008). Over time this may lead to a “secondary” set of beliefs to develop such as learned helplessness and motivational type beliefs (Maier, 1976). For example, those who hoard often report feelings of shame and embarrassment, social isolation and the belief that change is not possible (Kellett, 2007; Wilbram, Kellett, & Beail, 2008). Similar phenomena are seen in other problems such as Panic and Agoraphobia (Breier, Charney, & Heninger, 1986; Katschnig & Amering, 1998) and may result in confusion regarding which problems are primary and which are secondary.

It is therefore possible that those who hoard simultaneously hold both primary positive and negative beliefs relating to their hoarding as well as developing secondary (consequential) beliefs related to the impact of hoarding with the passage of time. However, the extent to which these co-exist and interact, and their development over the course of this disorder are unknown. The most plausible hypothesis is that the development of compulsive hoarding is initially driven by primary beliefs such as a fear of material deprivation or a strong emotional attachment to objects as well as the reinforcing emotional consequences of possessions and their acquisition; yet as the problem becomes more chronic, secondary beliefs about inability to change, shame and defectiveness may also feed into the problem becoming secondary maintaining factors.

This may explain the lag between onset of hoarding symptoms and help seeking. Hoarding typically develops in early adolescence (Grisham, Frost, Steketee, Kim, & Hood, 2006; Samuels et al., 2008) but individuals tend not to present to services until later in life (40s and 50s). Similarly, the mean age of participants in research is typically between 50 and 60 years old (Gordon et al., 2013; Grisham et al., 2007; Hartl et al., 2005; Tolin & Villavicencio, 2011). This lag between onset and participation in treatment or research means that the primary psychopathology of hoarding may be masked by secondary features resulting from years of living with a debilitating condition. Some studies examining the course of hoarding have found that it becomes increasingly more severe and problematic over time (Grisham et al., 2006; Tolin, Meunier, Frost, & Steketee, 2010). Such studies have relied primarily on retrospective accounts from individual with hoarding, which raises questions about reliability of results. No studies to date have compared young and older individuals with hoarding difficulties.

Primary aim: Pilot the protocol and assess the rate of recruitment and acceptability of procedure

The aim of the study was to test a protocol for comparing younger and older hoarders. This protocol was designed to identify the beliefs present relatively early in the disorder, possibly representing the core psychopathology of the problem, and those that arise from the impact of living with hoarding in the longer term. As there have been no previous studies comparing younger and older hoarders, and younger hoarders do not typically come forward for help, it is necessary to carry out a pilot study. This pilot study aims to determine the rate of recruitment and effectiveness of recruitment strategies, test the study procedures including acceptability and participant burden.

Secondary aim: To pilot and assess provisional psychometric properties of new measures:

As described above this protocol was designed to identify the beliefs that are present relatively early in the disorder and those that arise from the impact of living with hoarding in the longer term. In order to do this three additional measures were developed (i) the effects of hoarding, (ii) desire to change and (iii) self-efficacy to address hoarding difficulties. These measures and their development are described in detail in the method section. The second aim of this study was to examine the provisional psychometric properties of these three new measures.

In addition careful examination of the literature (Steketee & Frost, 2003; Kellett, 2006; Kellett et al 2010) suggests the current measure of hoarding beliefs used by our group (Beliefs About Hoarding; Gordon et al 2013) is under-inclusive in terms of concepts regarded as relevant to the psychopathology of hoarding. Therefore this measure was extended in order to evaluate the wider range of beliefs associated with hoarding. The revised measure will include a refined version of the original dimensions of (i) harm avoidance, (ii) attachment and (iii) material

deprivation. This will then be extended to include dimensions looking at (i) identity, (ii) custodian of value, (iii) memory and (iv) emotional avoidance. Again this measure and its development are described in detail in the method section. This pilot study will also provide provisional validity data for this extended measure.

Method

Participants

A total of sixty-two people consented to take part in the study and completed the interview. Of these, two people were excluded as they did not meet the full criteria for hoarding. This was decided following consultation with a senior clinical psychologist and a review of the recorded diagnostic interview. Seven participants (six with hoarding and one non-clinical control) failed to return the questionnaire pack. Therefore, the final sample consisted of fifty-three participants divided into three groups: non-clinical controls (n=18), individuals with hoarding difficulties below the age of forty five (young hoarders n=12) and individuals with hoarding above the age of forty-five (older hoarders n= 23). Participants were recruited through charities and support groups including OCD-UK, a leading national charity independently working with and for people with OCD and Help for Hoarders, a national support network for people with Compulsive Hoarding. Online and social media resources, such as twitter, were also used. The non-clinical controls were recruited through similar online and social media outlets as the hoarding group as well as via emails sent circulated to family, friends or colleagues.

All participants were interviewed either face-to-face or via telephone using structured diagnostic interviews in order to confirm diagnoses and suitability for the study. Participants were excluded if they were >18 years of age, met DSM-IV criteria for substance abuse/dependence, or where there was evidence of organic brain injury. Informed consent was obtained and participants were compensated for their time. The University of Bath Ethics Committee granted ethical approval.

Procedure

All participants were screened with the Hoarding Disorder Rating Scale (Tolin, Frost, & Steketee, 2010). A score of above three on questions 1, 2, 4 and 5 was used as an indicator of hoarding and participants went on to complete the Structured Interview for Hoarding Disorder (Nordsletten et al., 2013). This method ensured that all participants with significant hoarding

symptoms were included in the study. Interviews were recorded and any uncertainties relating to diagnosis were resolved through discussion with a senior clinical psychologist with expertise in hoarding.

Participants who did not report any symptoms of hoarding on the HRDS were allocated to the non-clinical control group. Following allocation to group participants completed the interview, which assessed demographic information, a screen for DSM-IV axis I disorders. Following the interview all participants were asked to complete a questionnaire pack which could be completed either online or by post. The online questionnaires were completed using Bristol Online Survey (BOS; University of Bath, 2015). Participants were sent a link to the questionnaire and were given a unique pin number in order to ensure anonymity and match the online responses to the interview. Similarly questionnaire packs posted to participants were marked with a pin number.

Measures

Beliefs about Hoarding Questionnaire-Revised

A new self-report measure developed during the initial phase of the study, which was based on the Beliefs about Hoarding Questionnaire (BAH; Gordon et al., 2013). The BAH is a self-report measure that assesses beliefs and experiences characteristic of hoarding including: hoarding motivated by harm avoidance/responsibility for harm, hoarding motivated by previous experience of material deprivation and hoarding related to attachment disturbance. It is comprised of 28 items with three subscales. Participants are asked to rate the degree of belief for each item on a scale from 0 to 100, where 0 indicates 'I did not believe this at all' and 100 indicates 'I was completely convinced this idea was true'. This measure demonstrated good internal consistency ($\alpha = .96$) and test retest reliability with a hoarding sample ($r = .83$). A careful examination of the literature suggested the original BAH is under-inclusive in terms of concepts regarded as relevant to the psychopathology of hoarding (Kellett, 2006; Kellett et al 2010). A thorough review of the beliefs in hoarding literature was carried out and items were generated based on this and through discussion with an expert panel of researchers and clinicians (PS, CL, JG) experienced in working with compulsive hoarders. As such four additional subscales were included (i) identity for example "Obtaining new possessions helps me get closer to the person I want to be", (ii) memory "Keeping my possessions stops me from forgetting important information", (iii) custodian of value "It is my responsibility to protect the value of my possessions", and (iv) emotional avoidance "My possessions stop me feeling lonely" (appendix 4). The final version used in this study was comprised of 52 items. The BAH-R was piloted by two individuals with hoarding and five individuals without hoarding in order to ensure

comprehensibility and to check for floor and ceiling effects.

Secondary beliefs about Hoarding

To date there are no available measures examining the impact of hoarding, desire to change or self-efficacy to address hoarding difficulties. Therefore, three additional measures were developed in the initial phase of this study. Items for each of these measures were generated based on a review of the literature and through discussion with an expert panel of researchers and clinicians (PS, CL, JG) experienced in working with compulsive hoarders.

1. The Effects of Hoarding Questionnaire (appendix 5): an eighteen item self report measure that assesses the impact of hoarding difficulties across a number of aspects of the individual's life including social, emotional, behavioural, and health and safety. Participants rated the degree to which they believed the statement was true for them over the past two weeks on a scale from 0 to 100, where 0 indicates 'I did not believe this at all' and 100 indicates 'I was completely convinced this idea was true'. Belief ratings are totalled to give an overall score.
2. Hoarding Desire to Change Questionnaire (appendix 6): a thirteen item self report measure that assesses the degree to which an individual sees their hoarding as problematic, the degree to which they wish to change and if they have taken any actions towards changing their hoarding behaviour. As such, the questionnaire has three subscales: (1) problem recognition "I enjoy having my possessions but think there is too much clutter"; (2) desire to change "I want to feel able to throw away some of the possessions in my home" and (3) action "I have recently thrown away some of my possessions". Participants rated the degree to which they believed the statement was true for them over the past two weeks on a scale from 0 to 100, where 0 indicates 'I did not believe this at all' and 100 indicates 'I was completely convinced this idea was true'.
3. Hoarding Self-Efficacy Questionnaire (appendix 7): a fourteen item self-report measure assessing an individual's self-efficacy to address their hoarding behaviour. This measure was developed in line with Bandura's (2006) guidelines for self-efficacy measures. Items represented tasks that would be necessary to successfully address hoarding difficulties and were generated by examining the cognitive behaviour treatment protocol for hoarding and through discussion with clinicians experienced treating compulsive hoarding at a national specialist service. Studies have documented self-report deficits in memory, planning and decision-making in hoarding (Grisham et al., 2007; Hartl et al., 2005; Hartl et al., 2004). Items were also included to assess this aspect.

Diagnostic measures

1. The Hoarding Rating Scale-Self-Report (HRS-SR; Tolin, Frost, et al., 2010) is a 5-item measure consisting of five Likert-type ratings from 0 (none) to 8 (extreme) of clutter, difficulty discarding, excessive acquisition, distress, and impairment. It has been used in a number of studies to screen for compulsive hoarding and has been acceptable reliability and validity (Frost, Tolin, Steketee, Fitch, & Selbo-Bruns, 2009).
2. The Structured Interview for Hoarding Disorder (Nordsletten et al., 2013) is a semi-structured interview used to establish DSM-5 diagnosis of Compulsive Hoarding. It has shown to have good inter-rater reliability for all core HD criteria and specifiers, and excellent convergent and discriminant (Nordsletten et al., 2013)
3. Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1997) is a short structured interview that showed good reliability and validity compared to the Composite International Diagnostic Interview and to the Structured Clinical Interview for DSM-IV (Sheehan et al., 1998)

Measures of psychopathology

1. Saving Inventory Revised (SIR; Frost, Steketee, & Grisham, 2004). The SI-R is a 23 item self-report measure that assesses difficulty discarding, clutter and compulsive acquisition. It has shown good internal consistency and reliability (Frost et al., 2004).
2. Clutter Image Rating (CIR; Frost, Steketee, Tolin, & Renaud, 2008). The CIR is a visual rating scale for clutter in three living spaces: the living room, kitchen and bedroom. Participants are required to choose one of the nine photographs, which look most like the different areas in their home. A mean composite score is calculated for each participant. The scale has good internal consistency (Frost et al., 2004) and good convergent and discriminant validity (Frost et al., 2008).
3. Obsessive Compulsive Inventory (OCI; Foa, Kozak, Salkovskis, Coles, & Amir, 1998) a 42-item self-report measure of the frequency and distress associated with a range of obsessions and compulsions including washing, checking, doubting, ordering, obsessions, hoarding and mental neutralising. The maximum total score across the subscales is 168. The maximum score for the hoarding subscale is 12. The OCI has high internal consistency for total distress (0.92) scores, and high test-retest reliability in an OCD sample and non-clinical controls (Foa et al., 1998).
4. Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001) a nine item for measuring the severity of depression. PHQ-9 scores of 5–9 indicate minimal symptoms, scores of between 10 and 14 suggests mild depression, 15–19 indicates moderately severe and scores of more than 20 suggests severe depression.

5. Generalised Anxiety Disorder-7 (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006). The GAD-7 consists of seven items measuring of generalised anxiety. Total scores of 5, 10 and 15 represent cut offs for mild, moderate and severe anxiety respectively. The GAD-7 has been found to be a valid tool to screen for anxiety and to assess its severity in clinical practice and research.
6. Work and Social Adjustment Scale (WSAS; Mundt, Marks, Shear, & Greist, 2002) is a self-report scale of functional impairment, containing five items, each with nine points ranging from zero to eight. The WSAS has been found to be a simple, reliable and valid measure of impaired functioning

Design

The study used a cross-sectional between-subjects design with three groups: individuals with hoarding difficulties below the age of forty-five (young hoarders group) and individuals with hoarding above the age of forty-five (older hoarders group) and a non-clinical benchmarking group. The main focus of the study is between group differences. Therefore, the group to which the participant belonged was the between subjects factor, with the various measures being tested as the within subjects factors.

Data analysis

Categorical data were compared using chi square or Fisher's exact tests; analyses were partitioned when larger tables showed significant associations. Continuous independent data were compared one-way analysis of variance (ANOVA). If ANOVAs indicated a statistically significant main effect of group, post hoc comparisons were made using the LSD (in cases of equal variances) or Dunnett's T3 (in cases of unequal variances) tests. Greenhouse–Geisser corrections were applied for within subject variables where the Epsilon coefficient was significant. Pearson's R correlations were used to look at the overall relationship between two continuous variables. In total there were 9 comparisons carried out using an ANOVA. Therefore a bonferonni correction was applied. As such a value of $p < .005$ was used to indicate a significant effect.

The original power calculation indicated that a minimum sample size of 66 (22 per group) would have 80% power to detect a large effect size ($f=0.25$) using a one-way ANOVA.

Results

This pilot study involved determining the rate of recruitment and effectiveness of recruitment strategies, testing the study procedures including acceptability and participant burden, and report on the psychometric properties of the new measures (Beliefs about Hoarding Questionnaire-Revised; The Effects of Hoarding Questionnaire; Hoarding Desire to Change Questionnaire; Hoarding Self-Efficacy Questionnaire). Preliminary findings will also be presented.

Recruitment and acceptability

Recruitment rate: Hoarders are a group that rarely comes forward on their own accord due to issues like stigma. This makes this aspect of the pilot study particularly important. Recruitment took place over an eight-month period. Over this period sixty-two people consented to take part in the study. Of those who gave informed consent, 100% completed the interview. Following the interview two people (3%) were excluded as they did not meet the full criteria for hoarding and were not eligible for the control group due to subclinical symptoms. As such 97% of all participants who consented to take part were appropriate for the study. Of those who completed the interview 85% of the hoarding groups completed the questionnaires whilst 95% of the non-clinical group completed the questionnaires.

Based on those who completed the full study (interview and questionnaires) the overall rate of recruitment for those with hoarding was approximately one per week. Older hoarders were recruited at approximately twice the rate of younger hoarders; 1 per 1.6 weeks compared to 1 per 3.2 weeks. As such in order to recruit the sample size specified by the power calculation (22 per groups) it would take 36.4 weeks to recruit the older hoarding group and 70.5 weeks to recruit the younger hoarding group.

Recruitment strategies Participants were recruited through charities and support groups including OCD-UK, a leading national charity independently working with and for people with OCD and Help for Hoarders, a national support network for people with Compulsive Hoarding. Online and social media resources, such as twitter, were also used. The non-clinical controls were recruited through similar online and social media outlets as the hoarding group as well as via emails circulated to family, friends or colleagues. What was learnt in this process was that recruiting through online and social media was a preferable alternative to healthcare settings. It was also possible to identify younger individuals when recruiting online and they were recruited at a higher rate than the rate they would typically present to services for treatment. Furthermore

as only 26% of our sample have ever sought help or treatment, recruiting through these mediums suggests we are successfully accessing a wider and perhaps more representative sample.

Acceptability of procedure and participant burden: Feedback from participants about the study was very positive. A number of participants sent cards or gave verbal feedback on their experience of taking part. The overarching theme was that participants found it to be a normalising experience and felt hopeful that research was looking at a condition that typically goes under the radar. In addition of those that completed the study 100% consented to being contacted to take part in future studies by the research team on hoarding. This feedback was in line with the high rate of completion (85%) described above.

Preliminary psychometric data on new measures

Beliefs about Hoarding Questionnaire-Revised:

Internal Consistency: high internal consistency was demonstrated for the measure as a whole ($\alpha = .88$) and the subscales; harm avoidance ($\alpha = .73$), attachment ($\alpha = .83$), material deprivation ($\alpha = .75$), memory ($\alpha = .78$), identity ($\alpha = .75$), custodian of value ($\alpha = .83$) and emotional avoidance ($\alpha = .88$).

Normality of data: The seven subscales of BAH-R were assessed for normality using the Shapiro-Wilk statistic. Each subscale was normally distributed for both younger and older hoarders; harm avoidance $SW=0.91$, $df=12$, $p>0.05$, $SW =0.96$, $df=22$, $p>0.05$, attachment $SW=0.95$, $df=12$, $p>0.05$, $SW =0.74$, $df=22$, $p>0.05$ material deprivation $SW=0.97$, $df=12$, $p>0.05$, $SW =0.96$, $df=22$, $p>0.05$, identity $SW=0.94$, $df=12$, $p>0.05$, $SW =0.94$, $df=22$, $p>0.05$, custodian of value $SW=0.93$, $df=12$, $p>0.05$, $SW =0.91$, $df=22$, $p>0.05$ and emotional avoidance $SW=0.87$, $df=12$, $p>0.05$, $SW =0.95$, $df=22$, $p>0.05$ respectively.

The Effects of Hoarding Questionnaire

Internal Consistency: Reliability was good with this measure demonstrating high internal consistency ($\alpha = .93$).

Normality of data: The EOH was tested for normality using the Shapiro-Wilk statistic which indicates that the younger hoarders and older hoarders were normally distributed; $SW=0.94$, $df=12$, $p>0.05$, $SW =0.95$, $df=22$, $p>0.05$ respectively.

Hoarding Desire to Change Questionnaire

Internal Consistency: Reliability was good in the present sample, indicating high internal consistency for the measure ($\alpha = .81$) and its subscales; problem recognition ($\alpha = .75$), desire to change ($\alpha = .58$) and action ($\alpha = .74$).

Hoarding Self-Efficacy Questionnaire

Internal Consistency: Reliability was good in the present sample, indicating reasonable internal consistency for the measure ($\alpha = .67$).

Normality of data

The Desire to Change Questionnaire was tested for normality using the Shapiro-Wilk statistic which indicates that the younger hoarders and older hoarders were normally distributed; $SW=0.90$, $df=12$, $p>0.05$; $SW=0.97$, $df=22$, $p>0.05$ respectively.

Preliminary findings

Despite the small sample size the scores on dependent variables of interest were normally distributed for both the younger and older hoarders. Thus it was possible to carry out statistical analysis. The demographics are first considered followed by an examination of differences in mood, social functioning, and comorbidity. Severity of hoarding symptoms and level of insight are then considered. Beliefs about possession will be explored followed by an examination of the beliefs about hoarding itself (impact of hoarding, desire to change and self-efficacy)

Demographics and descriptive variables: The final sample consisted of fifty-three participants divided into three groups: non-clinical controls ($n=18$), individuals with hoarding difficulties below the age of forty five (young hoarders $n=12$) and individuals with hoarding above the age of forty-five (older hoarders $n=23$). The demographic characteristics of the three groups (non-clinical, younger hoarders and older hoarders) are displayed in Table 1.

Table1: Demographic characteristics of the three groups and for the combined hoarders.

	Non-Clinical (N=18)	Young Hoarders (N=12)	Older Hoarders (N=23)	Total Hoarders (N=35)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age	40 (15)	35 (6.0)	59 (6.7)	
	N (%)	N (%)	N (%)	N (%)
Female	13 ^a (72)	10 ^a (83.3)	22 ^a (95.7)	32
<i>Relationship Status</i>				
Single	7 ^a (38.9)	3 ^a (25)	6 ^a (26.1)	9
Married/In relationship	10 ^a (55.6)	8 ^a (66.7)	7 ^a (30.4)	15
Divorced/Separated	1 ^a (5.6)	1 ^a (8.3)	8 ^a (34.8)	9
Widowed	0 ^a (0)	0 ^a (0)	2 ^a (8.7)	2
<i>Living Situation</i>				
Living alone	4 ^a (22.2)	2 ^a (16.7)	14 ^b (60.9)	16
Cohabiting	14 ^a (77.8)	10 ^a (83.3)	9 ^b (39.1)	19
<i>Level of Education</i>				
GCSE/A-level	4 ^a (22.2)	2 ^a (16.7)	12 ^a (52.2)	14
Undergraduate	7 ^a (38.9)	7 ^a (58.3)	6 ^a (26.1)	13
Postgraduate	7 ^a (38.9)	3 ^a (25)	5 ^a (21.7)	8

Note: Means with differing letters differ significantly; * = significant association between group and variable.

A one-way ANOVA indicated a significant difference in age across the three groups ($F_{(2, 50)} = 27.5$; $p < .001$). Post-hoc tests (Dunnnett's T3) revealed that the non-clinical controls and the younger hoarders were significantly younger than the older hoarders ($p < .001$). There was no significant difference in age between the healthy controls and the younger hoarders ($p > .05$). There was no association between gender and group (Fisher's exact test; $p = .083$), level of education and group (Fisher's exact test; $p = .14$) or marital status and group ($p = .09$). However there was an association between living situation and group (Fisher's exact test; $p < .05$). The Fishers Exact test was portioned to reveal a difference between the older hoarders and the younger hoarders ($p < .05$), and between older hoarders and non-clinical controls ($p < .05$) indicating that the older hoarders were more likely to be living alone ($p > .05$). There was no difference between the non-clinical controls and younger hoarders ($p > .05$).

Mood, psychological symptoms and social functioning: Table 2 presents the results of psychopathology for the three groups. A one-way ANOVA indicated a significant difference between groups in PHQ-9 depression ($F_{(2, 50)} = 12.2$; $p < .001$), GAD-7 anxiety ($F_{(2, 50)} = 10.3$; $p < .001$) and WASA social functioning ($F_{(2, 50)} = 15.5$; $p < .001$). Post-hoc tests (Dunnnett's T3)

revealed that the non-clinical controls were significantly different to younger and older hoarders on PHQ-9 depression ($p < .001$), GAD-7 anxiety ($p < .001$) and WASA social functioning ($p < .01$). There was no significant difference between the younger and older hoarders any of the three measures ($p > .05$).

Table 2: Measures of psychopathology

	Non-Clinical (N=18)	Young Hoarding (N=12)	Older Hoarding (N=23)	Statistics		
	Mean (SD)	Mean (SD)	Mean (SD)	F	df	p
GAD-7*	0.3 ^a (1.2)	6.2 ^b (5.7)	5.4 ^b (4.7)	10.3	2, 50	.000
PHQ-9*	0.3 ^a (1.0)	7.8 ^b (6.6)	7.2 ^b (5.9)	12.2	2, 50	.000
WASA*	1.4 ^a (3.2)	14.0 ^b (9.3)	15 ^b (10.2)	15.5	2, 50	.000
<i>OCI distress</i>						
Washing	0.7 ^a (0.8)	5 ^a (6.7)	2.1 ^a (5.0)	3.1	2, 50	.053
Checking*	1.2 ^a (1.5)	6.4 ^b (6.5)	6.7 ^b (6.7)	5.9	2, 50	.005
Doubting	0.7 ^a (1.2)	3.9 ^b (3.9)	3.4 ^b (3.5)	5.6	2, 50	.007
Ordering	2.1 ^a (2.2)	8.1 ^b (7.4)	4.5 ^b (4.8)	5.3	2, 50	.008
Obsessions*	1.8 ^a (2.5)	9.7 ^b (9.1)	9.3 ^b (7.4)	7.8	2, 50	.001
Hoarding	1.5 ^a (1.6)	9.3 ^b (2.4)	8.5 ^b (3.1)	49.1	2, 50	.000
Neutralising	0.9 ^a (1.4)	4.3 ^b (5.1)	3.7 ^b (4.1)	3.9	2, 50	.027
Total*	9.3 ^a (1.4)	48.1 ^b (36.6)	38.7 ^b (28.2)	10.0	2, 50	.000

Note: Means with differing letters differ significantly; GAD-7 = Generalised Anxiety Disorder – 7; PHQ-9 = Patient Health Questionnaire – 9; WSAS = Work and Social Adjustment Scale. OCI = Obsessive Compulsive Inventory

Obsessive–Compulsive Inventory (OCI): A mixed model analysis of variance using one grouping factor (the three groups) and one within-subjects factor (subscale) was carried out on this measure of distress associated with obsessions and compulsions. There was a significant main effect of subscale ($F_{[3.9, 197.45]} = 16.3$, $p < .001$), with a main effect of group ($F_{[1,50]} = 10.18$, $p < .001$). However, these effects were modified by a significant group * subscale interaction ($F_{[7.9, 197.45]} = 3.706$, $p < .001$). In order to analyse the interaction further, simple main effects ANOVAs with multiple comparisons were carried out for each subscale. Post-hoc tests (Dunnett's T3) revealed significant differences between the non-clinical group and both the hoarding groups on all subscales of the OCI and the OCI total.

Axis I co-morbidity: Table 3 displays the number of participants in each group meeting the criteria for an Axis I co-morbidity as measured by the MINI. Fisher's Exact test revealed no association between groups and bipolar disorder, social phobia, post-traumatic stress disorder, generalised anxiety disorder, anorexia, bulimia or psychosis. There was an association between group and depression ($p < .01$) and between group and panic disorder ($p < .05$). When this was explored using partitioned Fisher's exact tests there was a significantly higher prevalence of depression and panic in both hoarding groups than in the non-clinical group ($p > .05$). There was no difference between the two hoarding groups in the prevalence of depression or panic ($p > .05$).

Table 3: Axis I co-morbidity

	Non-Clinical N=18	Young Hoarding N=12	Older Hoarding N=23	Statistics p
OCD	0 ^a (0)	3 ^a (25)	3 ^a (13)	.071
Depression	0 ^a (0)	5 ^b (41.6)	8 ^b (34.8)	.003
Mania	0 ^a (0)	3 ^a (25)	2 ^a (8.7)	.068
Panic*	0 ^a (0)	4 ^b (33.3)	3 ^b (13)	.027
Social Phobia	0 ^a (0)	3 ^a (25)	3 ^a (13)	.071
PTSD	0 ^a (0)	1 ^a (8.3)	0 ^a (0)	.226
GAD	0 ^a (0)	1 ^a (8.3)	2 ^a (8.7)	.099
Psychosis	0 ^a (0)	0 ^a (0)	1 ^a (8.3)	.226
Anorexia	1 ^a (5.6)	0 ^a (0)	0 ^a (0)	.566
Bulimia	0 ^a (0)	0 ^a (0)	0 ^a (0)	
Substance Dependence	0 ^a (0)	0 ^a (0)	0 ^a (0)	
Substance Abuse	0 ^a (0)	0 ^a (0)	0 ^a (0)	

Note. Means with differing letters differ significantly; PTSD = posttraumatic stress disorder; GAD = generalised anxiety disorder; OCD = Obsessive Compulsive Disorder

Severity of hoarding symptoms: The means and standard deviations for measures of severity (SI-R, HSRS, CIR) are presented in Table 4.

Savings Inventory-Revised (SI-R): A mixed model analysis of variance using one grouping factor (the three groups) and one within-subjects factor (subscale) was carried out for this measure of severity of hoarding symptoms. There was a significant main effect of subscale ($F_{[1.64, 82.18]} = 43.27$ $p < .001$), with a main effect of group ($F_{[2,50]} = 96.53$, $p < .001$). These effects were modified by a significant group subscale interaction $F_{[3.29, 82.18]} = 26.42$ $p < .001$). Post hoc tests revealed significant differences between the non-clinical control group and both the hoarding groups ($p < .001$), there was no difference between the young hoarders and the older hoarders on any of the subscales of the SI-R (acquisition $p = .72$; clutter $p = .99$; difficulty discarding $p = .84$) or on the total SI-R score ($p = .99$).

Hoarding Rating Scale: Analysis showed a main effect of group on this measure of severity ($F_{[2,52]} = 112.4$, $p < .001$). Post Hoc tests showed that a significant that the non-clinical controls were significantly different to younger and older hoarders ($p < .001$). There was no difference between the younger and older hoarders ($p = .93$).

Clutter Image Rating: Analysis showed a main effect of group on the average severity of clutter for the three main rooms ($F_{[2,52]} = 26.7$, $p < .001$). Post Hoc tests (Dunnett-T3) showed that a significant that the non-clinical controls were significantly different to younger and older hoarders ($p < .001$). There was no difference between the younger and older hoarders ($p = .98$).

Table 4: Mean (SD) scores on hoarding measures according to group

	Non-Clinical (N=18)	Young Hoarding (N=12)	Older Hoarding (N=23)	Statistics		
	Mean (SD)	Mean (SD)	Mean (SD)	F	df	p
<i>SI-R</i>						
Excessive Acquisition*	4.7 ^a (2.9)	16.7 ^b (4.4)	15 ^b (6.4)	27.8	2,50	.000
Difficulty Discarding*	5 ^a (3.0)	19.5 ^b (3.8)	19.8 ^b (4.5)	81.1	2,50	.000
Clutter*	5.0 ^a (3.3)	25.8 ^b (5.7)	26.4 ^b (6.8)	115.5	2,50	.000
Total	12 ^a (6.9)	62.1 ^b (13.2)	61.2 ^b (14.8)	96.5	2,50	.000
<i>CIR</i>						
Average of 3 main rooms*	1.4 ^a (0.5)	4.1 ^b (1.3)	4.3 ^b (1.8)	26.7	2,50	.000
<i>HDRS</i>						
Total*	4.3 ^a (4.6)	28.1 ^b (6.0)	27.3 ^b (5.7)	112.4	2,50	.000

Note. Means with differing letters differ significantly; SI-R = Savings Inventory Revised; CIR = Clutter Images Rating Scale; HDRS=Hoarding Disorder Rating Scale

Insight and help seeking: Table 5 presents figures on insight and help seeking for both hoarding group and the total hoarding sample. There was no association between group and level of insight or between group and help seeking.

Table 5: Level of insight and help-seeking for both hoarding group and the total hoarding sample

	Young hoarding N=12	Older hoarders N=23	Total Hoarders N=35
	N (%)	N (%)	N (%)
<i>Insight</i>			
Good	11 (91.7)	18 (78.3)	29
Poor	1 (8.3)	5 (21.7)	6
Previously sought treatment	3 (25)	6 (26.1)	9
	Mean (SD)	Mean (SD)	Mean (SD)
Age sought treatment	32.7 (6.4)	57.0 (7.0)	49.7 (13.5)
Age received treatment	33.5 (6.4)	58 (7.0)	52.6 (12.6)
Mean time symptom free	0 (0)	0 (0)	0 (0)

Age and symptom duration as continuous variables: To ensure the small sample size was not masking an effect the overall relationship between age and symptom severity was examined. A Pearson's R bivariate correlation examined the effect of age across the combined hoarding sample (N=35) found that age was not significantly with any of the measures of

hoarding severity (SI-R, CIRS, HDRS). The relationship between duration of symptoms and severity of symptoms was also explored. Again Pearson's R found no relationship between duration of symptoms correlated significantly with any of the measures of hoarding severity (SI-R, CIRS, HDRS).

Beliefs about hoarding: A mixed model analysis of variance using one grouping factor (the three groups) and one within-subjects factor (subscale) was carried out for this beliefs about hoarding measure. There was a significant main effect of subscale ($F_{[4.683]} = 3.98, p < .01$), with a main effect of group ($F_{[1,50]} = 23.1, p < .001$). The group x subscale interaction was not significant $F_{[8.188]} = 1.2, p = .27$. Post hoc tests revealed significant differences between the non-clinical controls and the two hoarding groups ($p < .001$) in their beliefs about possessions (harm avoidance, material deprivation, attachment, memory, identity, custodian of violence and emotional avoidance). There was no difference between the young hoarders and older hoarders ($p = .992$).

Secondary beliefs about hoarding

Effect of hoarding: A one way ANOVA showed a main effect of group on effect of hoarding ($F_{[2,50]} = 43.1, p < .001$). Post Hoc tests (Dunnett's T3) showed that the non clinical controls were significantly different to younger and older hoarders ($p < .001$); there was no difference between the younger and older hoarders ($p = .99$) in the perceived effect hoarding was having on them.

Desire to Change: A mixed model analysis of variance using one grouping factor (the three groups) and one within-subjects factor (subscale) was carried out for this measure of desire to change hoarding behaviour. There was a significant main effect of subscale ($F_{[1.76]} = 5.96, p < .01$), with a main effect of group ($F_{[1,50]} = 62.3, p < .001$). These effects were modified by a significant group subscale interaction ($F_{[3,5]} = 4.37, p < .01$). Post Hoc tests (Dunnett T3) showed that the non clinical controls were significantly different to younger and older hoarders ($p < .001$); there was no difference between the younger and older hoarders in the degree to which they recognised their hoarding was problematic ($p = .15$), desired to change it ($p = 1.0$) or had taken steps to address it ($p = .91$).

Hoarding Self-Efficacy Scale: A one way ANOVA showed a main effect of group on self-efficacy ($F_{[2,50]} = 54.4, p < .001$). Post Hoc tests (LSD) showed that the non clinical controls were significantly different to younger and older hoarders ($p < .001$) with both hoarding groups reporting significantly lower confidence in their ability to perform tasks necessary for addressing hoarding difficulties. However, there was no difference between the younger and older hoarders ($p = .51$).

Table 6: Mean scores (SD) on each of the BAH subscales and secondary belief measures according to group.

	Non-Clinical (N=18)	Young Hoarding (N=12)	Older Hoarding (N=23)	Statistics		
	Mean (SD)	Mean (SD)	Mean (SD)	F	df	p
<i>Beliefs about hoarding</i>						
Harm avoidance*	14.5 ^a (13.8)	41.3 ^b (18.3)	39.7 ^b (23.0)	10.6	2, 50	.000
Attachment*	10.3 ^a (10.7)	44.2 ^b (20.2)	41.3 ^b (21.3)	18.6	2, 50	.000
Material deprivation*	11.3 ^a (11.6)	52.4 ^b (22.8)	50.9 ^b (25.0)	21.9	2, 50	.000
Memory*	11 ^a (8.1)	40.3 ^b (28.8)	36.7 ^b (25.4)	8.9	2, 50	.000
Identity*	25 ^a (17.4)	44.7 ^b (23.1)	48.1 ^b (21.5)	6.9	2, 50	.002
Custodian of value*	15.6 ^a (15.6)	49.6 ^b (22.3)	49.4 ^b (24.5)	15.1	2, 50	.000
Emotional avoidance*	14.2 ^a (13.7)	55.1 ^b (26.8)	50.1 ^b (30.4)	13.5	2, 50	.000
<i>Effect of Hoarding</i>						
Total*	1.4 ^a (4.1)	57.8 ^b (27.0)	55.7 ^b (23.9)	43.1	2, 50	.000
<i>Desire to Change</i>						
Problem recognition*	14.3 ^a (14.6)	86.7 ^b (14.7)	77.1 ^b (22.0)	78.9	2, 50	.000
Desire to change*	24.4 ^a (24.7)	77.5 ^b (18.6)	77.5 ^b (17.9)	39.4	2, 50	.000
Action*	22.2 ^a (19.1)	67.3 ^b (26.3)	62.1 ^b (23.5)	20.0	2, 50	.000
<i>Self Efficacy</i>						
Total*	88.8 ^a (12.7)	47.7 ^b (11.3)	50.7 ^b (13.7)	55.0	2, 50	.000

Note. Means with differing letters differ significantly

Discussion

The aim of this study was to assess the feasibility of gathering a large sample comparing younger and older hoarders. Younger hoarders typically do not come forward for help and therefore it was important to conduct a pilot study to assess rate of recruitment, acceptability of protocol and to provide preliminary psychometric data on new measures designed for the purpose of this study. As expected the rate of recruitment for younger hoarders was lower than that of older hoarders. Older hoarders were recruited at approximately twice the rate of younger hoarders; 1 per 1.6 weeks compared to 1 per 3.2 weeks. As such in order to recruit the sample size specified by the power calculation (22 per groups) it would take 36.4 weeks to recruit the older hoarding group and 70.5 weeks to recruit the younger hoarding group.

Furthermore participant response rate on the questionnaires was 85%. This is considered a high response rate therefore minimising the risk of bias. In addition 100% of participants who took part in the study indicated that they would like to be contacted about future studies. This, in combination with the high response rate, indicates that the procedure is acceptable to participants and the number of questionnaires that participants were asked to complete was not too burdensome.

Although the numbers were small it was possible to carry out statistical analysis. This study is the first to evaluate the extent to which older hoarders differed from those who were

younger on the basis that the late presentation of hoarding may result in the core psychopathology being obscured by factors associated with chronicity and increased levels of demoralisation and helplessness. As expected, hoarders differed from the community controls on all variables, including the new beliefs subscales. However, contrary to expectations, there were in fact no differences between young hoarders and older hoarders in terms of symptom severity, mood and social function, or co-morbid mental health difficulties. Young hoarders and older hoarders also held similar beliefs about their possessions and endorsed them to the same degree. Furthermore, there were no differences in the self-reported impact of hoarding, desire to change or self-efficacy to address hoarding difficulties. There was also no difference in level of insight or help seeking across the two hoarding groups. However as this study was underpowered the effect of age may be masked by the small sample size or by the somewhat arbitrary age split. In order to address this the overall effect of both age and symptom duration were explored for the entire sample (n=35). Neither age nor symptom duration were related to any measure of symptom severity, beliefs about hoarding, effect of hoarding, desire to change or self-efficacy.

These preliminary findings appear to contradict evidence and assumptions that hoarding is a progressive disorder. However they are in line with a two studies that found that although hoarding may be initially progressive, symptoms then plateau and remain stable. Tolin and colleagues (2010) asked participants to retrospectively rate the severity of their hoarding symptoms for each 5-year period of life. They found that the percentage of people reporting a severe level of symptoms increased up to age 39 and then remained stable between 40 and 80 years old. A similar retrospective study carried out by Grisham and colleagues (2006) found that mild hoarding symptoms typically developed in adolescence and reached severe levels in the early-to-mid 30s. Similarly, recognition of symptoms as problematic occurred approximately a decade after onset. Thus, in the first decade following onset age and symptom duration may be related to symptom severity and insight. However, this effect plateaus and severity is determined by other factors rather than age. Studies examining hoarding in an adolescent sample would be helpful in determining if this is the case. To date, studies looking at the course of hoarding have relied on retrospective self-report accounts, which are open to bias and have questionable reliability (Larsen, 1992; Maughan & Rutter, 1997). Although these studies have been helpful in developing hypothesis and theories around the course hoarding takes, cross sectional or longitudinal studies are now required to substantiate these.

As hoarding is characterized by the excessive acquisition and difficulty discarding of possessions, it would be expected that, over time, clutter would continue to accumulate. However, the preliminary findings do not suggest a difference between age groups in degree of clutter. It may be that individuals reach a kind of equilibrium. However this would need to be confirmed by a full scale study. If this result it confirmed it might suggest that there is a slow down in input (acquiring) or an increase in output (discarding). This also raises questions about

the factors that determine the level of severity at which symptoms stabilise. To date, very few studies have examined factors that influence symptom severity in compulsive hoarding. There is some evidence that experiences of trauma, relationship status and neurocognitive deficits may be important determinants of severity. However, there is a need to explore this further.

It is hypothesized that older hoarders would have more negative beliefs about the impact of hoarding and have developed more secondary (consequential) difficulties such as comorbid disorders and lower levels of self efficacy relating to change. However, these provisional findings and results of Tolin et al (2010) and Grisham et al (2006) suggest that younger and older hoarders do not differ in their severity. This might suggest that clinicians should approach treatment in a similar manner with both young and older hoarders. It also raises questions about why individuals with hoarding difficulties typically don't seek treatment until later in life. Our initial hypothesis was that as hoarding symptoms and the associated impact become more severe over time, individuals become more motivated to seek help. However, as age and symptom duration are not related to symptom severity or insight, other factors that may contribute to the lag between onset, problem recognition and help-seeking need to be considered. Participants in both hoarding groups strongly endorsed items on the desire change questionnaire but the numbers that reported seeking help or treatment was low (26%). This may suggest a need to move from considering individual factors such as insight and age, and look more at contextual factors such as stigma or service accessibility. Studies looking at the barriers to help-seeking in hoarding, both individual and systemic, would be extremely valuable. If these barriers can be identified, similarities between both groups in beliefs about possessions, insight, and desire to change suggests that engaging individuals in treatment may be possible earlier in the course of the disorder.

Strengths and limitations

This is the first study to examine the effect of age on hoarding with a cross-sectional design as such it was carried out as a pilot study. The mean total scores on the SI-R for both hoarding groups were consistent with previous studies, which reported overall mean scores of between 50 and 60 for individuals with compulsive hoarding (Gordon et al., 2013; Grisham et al., 2010). Similarly, mean score on the CIR was comparable with those reported in previous studies on compulsive hoarding (Frost et al., 2009; Gordon et al., 2013; Grisham et al., 2010). Diagnosis was also confirmed using the Structured Interview for Hoarding Disorder.

This study does have a number of significant limitations. The sample size is small particularly in the young hoarding group; this has implications for the validity and generalizability of the findings. Although the results do not suggest even a slight trend towards

significance, a larger sample is needed to confirm the current findings. It may also be that an even younger sample would be different, although the lack of correlation with age/duration of disorder may suggest that this is not so. A further limitation is that a number of measures used in this study have not been validated. However, the similarities between both hoarding groups were consistent between standardised and unstandardized measures

One potential explanation for the negative finding that may be worth considering is that there was a selection bias in sampling. Those who volunteer to take part in research on hoarding may be more likely to identify as having hoarding difficulties and be affected negatively by it. This may account for the difficulty recruiting younger individuals with hoarding as a smaller proportion of young hoarders identify as such and are less likely to be affected by it.

Conclusions

The course of hoarding is likely to be complex and heterogeneous. This is an important area for future research and this pilot study indicates that although the rate of recruitment for younger hoarders is slower than older hoarders it is feasible. A full scale study is necessary to confirm provisional findings.

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Executive Summary

Compulsive hoarding is when an individual collects a large number of objects of seemingly little value to the point that living spaces cannot be used for their intended purpose. Hoarding is considered to be a serious mental health problem.

Symptoms usually develop in early adolescence although individuals do not typically present for treatment until later life. Therefore, when individuals present for treatment, it is difficult to know which symptoms are hoarding symptoms and which symptoms are the result of living in a very cluttered home for three or four decades (e.g. depression, social isolation and hopelessness).

In order to understand this, a study procedure was designed to compare younger individuals, who have had the condition for a relatively short amount of time, to older hoarders who have lived with hoarding for a longer period of time. However as no previous studies have attempted to recruit younger hoarders it was necessary to carry out a pilot study. This pilot study aims to determine the rate of recruitment and effectiveness of recruitment strategies and to test the study procedures including acceptability and participant burden.

Summary of results

- Rate of recruitment for younger hoarders was lower than that of older hoarders. Older hoarders were recruited at approximately twice the rate of younger hoarders; 1 per 1.6 weeks compared to 1 per 3.2 weeks.
- In order to recruit the sample size specified by the power calculation (22 per groups) it would take 36.4 weeks to recruit the older hoarding group and 70.5 weeks to recruit the younger hoarding group.
- There was a high response rate on the questionnaires (85%) and participants gave positive feedback on their experience of taking part. This suggests that the procedure was acceptable to participants and not too burdensome.
- Provisional data analysis suggests that hoarding symptoms are as severe in younger hoarders and older hoarders and they have similar levels of anxiety, depression and work and social difficulties. Furthermore both younger and older hoarders have the same beliefs about their possessions, level of insight into their problems, desire to change their hoarding behaviour and had a similar level of confidence in their ability to do so.

Conclusion

This is an important area for future research. This pilot study indicates that although the rate of recruitment for younger hoarders is slower than older hoarders it is feasible. It also found that the procedure was acceptable to participants and not too burdensome. Provisional analysis suggests that hoarding symptoms might be relatively stable over time and are not determined by age or symptom duration. However a full scale study is necessary to confirm these provisional findings.

Connecting Narrative

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The aim of this piece is to provide a reflective narrative on the process of developing and executing the research components of training. I will also reflect on the challenges and key learning points that research has afforded me. I will discuss each component under the following headings; main research project, service improvement project, literature review, case studies, and finally, future aspirations.

Main research project

Development

I became interested in compulsive hoarding after doing a presentation on Obsessive Compulsive Disorder and hoarding on my older adult placement. Having just moved from a working age adult placement to an older adult placement, I was mindful of how age and symptom duration impact on presentation and treatment response. This was particularly pertinent in hoarding because of the marked lag between symptom onset and help seeking. This general interest was developed into specific research questions through discussions with Prof Paul Salkovskis, my main research supervisor.

Collaboration

I developed my research ideas at a time when a research grant application relating to hoarding difficulties was being developed. This meant that I was fortunate enough to have the opportunity to collaborate with other staff members and develop a research protocol that effectively combined our different research questions. Collaborating on research had a number of advantages as well as presenting some challenges. I had input from different staff members when developing my questionnaires, which was invaluable. Furthermore being involved in a high quality piece of research encouraged me to apply more rigour to the design and execution of many aspects of my own research project.

The main challenge arose during data collection. Combining the research projects meant that interviews were substantially longer than if I was completing my project alone. Interviews with clinical participants took an average of three hours and up to five hours at the longest. I was very fortunate to have two psychology students assist with the interviews but I completed 80% of clinical interviews and was responsible for recruiting, scheduling interviews and distributing questionnaire packs to all participants. Despite this, completing the interviews was an

opportunity to gain an insight into the development of hoarding difficulties that went far beyond my own research questions and was an experience that I really valued.

Recruitment

I began recruitment for my research project in September 2014. Prior to beginning this project it was difficult to predict the rate of recruitment, as those with hoarding difficulties rarely present to services. As such recruitment strategies predominantly involved online and media outlets. I had never been very active in social media and although I had colleagues who had used it for research purposes, I had no experience of this. I was very active on twitter and made contact with a number of mental health organisations such as OCD-UK, Help for Hoarders and Rethink. I also spoke at hoarding support groups in Berkshire and Devon in order to promote the study. As expected it was more difficult to recruit to the young hoarders group, but I do feel the use of social media maximised the chances of accessing this population.

I was really struck by how helpful people were in promoting the study and how willing individuals with hoarding difficulties were to volunteer. It also highlighted the lack of available support for those who hoard and how much volunteers valued that someone was taking the time to understand what is usually a very hidden and isolating problem.

Public engagement in research

Recruiting online and through other media outlets gave me the opportunity to promote not only my research but also a psychological understanding of hoarding difficulties. I participated in a hoarding awareness event for professionals organised by the Devon and Somerset Fire Brigade. Attendees were predominantly fire-fighters, social workers, and those working for housing associations and environmental health. This was an opportunity to not only talk about my research but also to share a psychological perspective on a difficulty that is often, unfortunately conceptualised as a lifestyle choice. I also co wrote an accessible article on hoarding difficulties with Prof Salkovskis that was published in a number of online newspapers including the Guardian.

Literature review

Development

I first became interested in violence after reading a systematic review on self-esteem and violence by Dr Julian Walker a psychologist working in the region. In this review a Cognitive Behavioural Model for violence was presented. I felt that this was a really nice example of how psychological models and theory can be applied to social problems. Violence has been a long-standing feature of society that incurs huge costs to police, civil justice, and health care services as well as the personal cost to victims. It therefore felt like a valuable area to research. I had a number of meetings with Julian Walker and spent time researching the area generally before settling on my specific research question.

I chose to carry out a systematic review for a number of reasons. It seemed the most appropriate method to answer the research questions. I also felt that it would be a valuable opportunity to get experience using a precise and valuable research methodology.

Process

High quality comprehensive reviews use a number of procedures to ensure accuracy and reliability including inter-rater reliability. A number of other trainees were also carrying out systematic reviews. It was agreed that we would do inter-rate reliability checks for paper selection process and data extraction. This highlighted the dilemma between what is best practice and what is feasible. As inter-rating is time consuming, particularly in addition to an already large workload, it was agreed that we would inter-rate 15% of the identified titles and abstracts. In order to prevent bias these were selected using a random number generator. This greatly reduced the workload of carrying out inter-rater reliability checks whilst maintaining quality.

Service Improvement Project

Development

In 2014 the University of Bath organised a summer school for those with an Autism Spectrum Disorder (ASD) about to start university. As it was the first year that the summer school was being run it was an opportune time to carry out a service improvement project (SIP). The evidence base on how to best support young people with ASD transitioning to university was limited. As such the focus of the SIP was to better understand the worries students had about transitioning to university and to evaluate how well the summer school addressed these concerns. The research questions were refined through discussion with Dr Ailsa Russell, the main organizer of the summer school and my SIP supervisor.

Questionnaire development

There was very little in the literature about what students with ASD worry about when starting university. As I did not want to make any assumptions about the content of their worries I decided to develop a new questionnaire for this purpose. The questionnaire asked each student to list their worries about starting university and then rate them on a Likert scale indicating how worried they were. Following the summer school each participant was given an idiosyncratic follow-up questionnaire that asked them to re-rate each of their previously listed worries. It was challenging to make the individual follow up questionnaires and match them to each participant. I was very fortunate to have an undergraduate research assistant who helped with data collection during the summer school. Following the summer school all the listed worries were pooled to make a new questionnaire assessing concerns about transition to university, which is currently being validated by the Department of Psychology.

Data entry and analysis

An undergraduate research assistant carried out the data entry and I carried out all the qualitative and quantitative analysis under the supervision of Dr Ailsa Russell. Although the focus groups were not part of the service improvement project they provided rich information about the experiences of students with ASD transitioning to university. I felt it was important that this was analysed as it had the potential to broadly guide the approach the summer school

took as well providing staff with a richer understanding of the experience of those with ASD (see appendix 3). This was analysed using thematic analysis. My supervisor Dr Ailsa Russell validated the themes by reviewing transcripts and coding.

Service improvement

The results of the SIP were fed back to those running the summer school. A number of changes were made to the programme based on the recommendations made. These included increasing the amount of time spent on social anxiety and disclosing one's diagnosis. The number of unstructured activities was also increased and a tour of the surrounding city was included in the evening events. The findings of the SIP were included in a report for the alumni who funded the project. As a result the project secured funding to run on an annual basis.

Reflections

This project was one of the most enjoyable experiences I have had on training. Not only did I get to be involved in a valuable programme but also I was able to help shape it. It really illustrated for me the value of research in service development, particularly when the project is developed collaboratively with the service. I also had the opportunity to be involved in running workshops at the summer school, which gave me a much better appreciation of the area that I was researching.

Case studies

The case studies were an opportunity to consider single case study design. Prior to training I had no experience of carrying out a case study and underestimated the value they have to offer. Over the course of training I developed the ability to plan and carry out different single case study designs (e.g. narrative and experimental) and gained a better understanding how they can contribute to the evidence base. I was also fortunate enough to get the opportunity to present a poster based on my working age adult case study at the BABCP Conference in 2014. This helped me to develop skills in extrapolating and communicating findings from a single case study in a way that is of value to other practitioners.

Completing case studies on each placement has also helped me to embed research into my clinical practice and demonstrated the values of the scientist-practitioner model possibly

more than any other method of research I completed during training. It allowed me to develop skills in formulation and hypothesis testing, and considering outcomes in terms of the wider evidence base. I was also struck by the ease at which you could identify an interesting case that had heuristic value.

Outcome measures help guide clinical decisions, highlight areas that need additional focus and help clients identify their own improvement. There has been increased emphasis on use of outcome measures over the last decade, driven largely by the IAPT initiative. Throughout training we have been encouraged to use routine outcome measures in our clinical work and to demonstrate this in our case studies. Reflecting on my case study portfolio I recognise both the value and challenges in using routine outcome measures. Most of my case studies use pre and post outcome measures. There are a number of limitations to this. Clark (2011) demonstrated that those who don't complete a post treatment outcome measure do not benefit as much from therapy as those who do. As such there is a selection bias in that you will have outcome data from a sample of people that are more likely to have benefited, therefore inflating the efficacy of your clinical work. Furthermore using session by session outcome measures you have the ability to react more quickly if something is not working and can use this information to help guide your clinical work..

Another challenge in using routine outcome measures is ensuring that you choose the most appropriate measure. Reflecting back on my case studies I noted that I typically used one outcome measure related to the presenting problem for example using the Obsessive Compulsive Inventory with a client who had OCD. However it has been well documented that anxiety disorders and depression are highly co-morbid. Therefore there is added value in using routine outcome measures for anxiety and depression along side any disorder specific measure. This allows the clinician to monitor the wider emotional wellbeing of the client throughout therapy and will allow them to detect if comorbid difficulties remain following the treatment of the presenting problem and allow the clinician to also target these in therapy if needed. . Although I think the use of outcome measures can be challenging particularly in services that are stretched or do not typically use routine outcome measures, they are a valuable part of clinical practice and I hope to apply them in my future career. There are a number of steps that I can take to facilitate this, for example asking clients to come in 15 minutes before their appointment and asking reception to give them the outcome measures to complete in the waiting room. Furthermore ensuring the client understands the purpose and value of the outcome measures facilitates engagement in this process.

Completing case studies also allows you to reflect on the interventions you have done and get feedback on how you would do them differently. This has been particularly helpful with my C5 case study. Since completing it I have read a number of papers of social anxiety (e.g.

Clark, 2005). This has allowed me to think about how I might approach this differently now that I have completed my training. Some of the key elements of Cognitive behaviour theory of social anxiety are that (a) Individuals interpret external social events in an excessively negative fashion (b) show enhanced self-focused attention when anxious in social situations (c) generate distorted observer-perspective images of how they think they appear to others when in feared social situations and they use this information to make inferences about how they appear to others and (d) reduced processing of external social cues when anxious- hence not having an opportunity for habituation/ disconfirmation of beliefs. As such CBT treatment of social anxiety aims to modifying self processing and exposure individuals to their true observable self. One of the most effective ways to achieve this is through video or audio feedback. Individuals with social anxiety tend to discount evidence, using recording devices allows them to gain first hand concrete evidence about their performance and symptoms e.g. going red, shaking. There is a strong body of evidence supporting this model of treatment and the use of video feedback. Reflecting back on my case study I did not adequately follow the model. If I was treating this case again I would have used video feedback as a cornerstone to the treatment.

In addition when I carried out this case study in one session the client had a band that she snapped every time she noticed that she had began self monitoring and then shifted her attention externally. Although this is suggested in a number of texts as a means of thought stopping (e.g. Carr & McNulty, 2014; Plante, 2010), there are a number of reasons why it was not appropriate. Firstly there are a number of empirically supported methods for attention training such as video feedback as described above. This was used as a technique in thought stopping however it has no proven efficacy in social anxiety. Furthermore such techniques have been used in an attempt to pair obsessional thoughts with pain (Mastellone, 1974), this was not an effective approach and also raises a number of ethical implications (Lam & Steketee, 2001). Furthermore there is a risk that this could be used by the young person as a form of self-harm or punishment. Although this was not the intention it highlights the importance of reflecting on interventions used and being aware of the negative messages you may implicitly be communicating.

Future Aspirations

I have really enjoyed and valued the research components of training. I hope to remain involved in research and would love to pursue a career in academia. I am currently writing up my SIP and literature review for publication and hope to continue recruitment on my main research project with the view to eventually publishing it. I feel the course has left me well equipped to carry out research within my clinical practice and has demonstrated the value of

different research methodologies from larger experimental designs and meta analyses to small-scale research projects and case studies.

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Appendix 1: Pilot University Transition Questionnaire

Participant
Number:

Question 1: Please list your main concerns and worries about starting university. Please rate how worried you are about each worry or concern by circling the number that best describes how worried you are. An example is provided below.
Example:

<i>Concern 1: concerned about budgeting money</i>				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Now please list your concerns and worries below. List as many as you can think of. You do not need to fill all the boxes.

Concern 1:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 2:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 3:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 4:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 5:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 6:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 7:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Question 2: How do you usually manage stress? What helps you to relax when you are anxious? Please write your answers in the box below.

Question 3: What are your hopes and expectations for your time at university?
Please write answer in the box below.

Question 4: How do you think having a diagnosis of an Autism Spectrum Disorder (ASD) will impact on your life at university? Please write answer in the box below.

Question 5: What do you hope to gain from the Autism Summer School at the University of Bath? What topics do you think it would be helpful for the Summer School to cover? Please write answer in the box below.

Question 6:

Please rate overall how positive or negative you feel about starting university.

1
Extremely
Negative

2
Slightly
Negative

3
Unsure

4
Slightly
Positive

5
Extremely
Positive

Appendix 2: Autism Summer School Evaluation Questionnaire

Participant
Number:

Question 1: Listed below are the concerns and worries that you identified in the previous questionnaire. Please rate how worried you are about them now.

Concern 1:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 2:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 3:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 4:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 5:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 6:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Question 2: Do you have any new concerns or worries in addition to the ones you originally listed, since completing the summer school? If so please list any additional things you are concerned or worried about. Please rate how worried you are about them now.

Concern 1:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 2:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Concern 3:				
1 Not worried	2 Slightly worried	3 Moderately worried	4 Very worried	5 Extremely worried

Question 3: What aspects of the summer school did you find the most helpful? Please write answer in the box below.

Question 4: What aspects of the summer school did you find the least helpful?
Please write answer in the box below.

Question 5: Do you have any suggestions on how we can improve the summer school? Or have any topics or activities that you think would have been helpful for us to cover? Please write answer in the box below.

Question 6: What are you looking forward to about starting university now that you have completed the summer school? Or what are your hopes and expectations for your time at university? Please write answer in the box below.

Question 7: Please rate the following.

How much did you **enjoy** the Summer School?

1	2	3	4	5
Not enjoyable at all	Not enjoyable	Neutral	Slightly enjoyable	Extremely enjoyable

How helpful was the Summer School?

1	2	3	4	5
Extremely unhelpful	Slightly unhelpful	Neutral	Slightly helpful	Extremely helpful

Please rate overall how positive or negative you feel about starting university.

1	2	3	4	5
Extremely Negative	Slightly Negative	Unsure	Slightly Positive	Extremely Positive

Appendix 3: Focus Group Analysis

Procedure

On arriving at the summer school participants were invited to take part in a focus group. Focus groups (n=3) comprising of between 6 and 9 students were held at the start of the Summer School to elicit a richer understanding of information gathered by the University Transition Questionnaire. A topic guide was developed based on the research questions and broadly covered hopes and expectations about starting university and student's worries and concerns. It included open ended questions such as *Do you think life at university will be very different from your life now?* What is it you are most worries about, starting university? What about university life are you looking forward to? A list of prompts was generated based on student's responses to the pTUQ. These were only to generate discussion if participants were struggling. Each focus group were facilitated by a Summer school tutor (University Lecturer/Reader in Psychology including a Clinical Psychologist) assisted by a clinical psychologist in training who took field notes.

Qualitative Analysis

Each focus group was audio-recorded and transcribed verbatim. Transcriptions were then checked for accuracy several times by two members of the research team. Thematic analysis was conducted according to the procedures outlined by Braun and Clarke (2006)

Two researchers independently read several transcriptions times in addition to listening to the audio recordings, in a process referred to as data emersion. During this process initial thoughts and ideas were noted down as this is considered an essential stage in analysis (Riessman, 1993).

Following on from this initial stage and building on the notes and ideas generated through transcription and data immersion was the coding phase. These codes identified features of the data that the researcher considered pertinent to the research question. The whole data set was given equal attention. Then from these codes themes were defined based on larger sections of the data by combining different codes that were similar or may have been considered the same aspect within the data. All initial codes relevant to the research question were incorporated into a theme. Thematic maps were developed to aid the generation of themes and consider the links and relationships between themes as recommended by

Braun and Clarke (2006). At this point any themes that did not have enough data to support them or were too diverse were discarded. This refinement of the themes took place on two levels, primarily with the coded data ensuring they formed a coherent pattern, secondly once a coherent pattern was formed the themes were considered in relation to the data set as a whole. This ensured the themes accurately reflected what was evident in the data set as a whole.

Once a clear idea of the various themes and how they fitted together emerged, themes were defined and named. Considerations were made not only of the story told within individual themes but how these related to the overall story that was evident within the data. The final stage of the report production involved choosing examples of transcript to illustrate elements of the themes. These extracts clearly identified issues within the theme and presented a lucid example of the point being made.

Validation of Qualitative results: A copy of the qualitative results was sent to each of the participants that took part in the focus group to ensure that the author's interpretation accurately represented their views. Participants were given three weeks to respond. The results of the validation process are reported at the end of the results section.

Qualitative Results

Five main themes were identified: The Social World, Leaving the Scaffolding of Home, Transition Towards Adulthood, Academic Demands; Practicalities of University Living.

The Social World

Within this theme, three subthemes were identified: understanding of the social world, their place within the social world, and surviving the social world.

Understanding of the social world: Throughout the discussions patterns emerged relating to how participants saw and categorized the social world. Participants described the different forms of social interaction and relationships they perceived in the world around them. One distinction that emerged was between structured and unstructured socialising. Participants described finding it easier to know what was expected in structured social situations such as class time and group work however once outside of a structured framework participants reported experiencing high levels of anxiety and discomfort.

“If I’m with a group and it’s a structured sort of work task I find I can do it sort of contribute but if it becomes unstructured I get more anxious so its sort of like instead of sort going out of school during lunch...I tend not to go ... whereas I would talk to them in school if its about work or a club task” (Group 1)

There was a sense that unstructured social time can be unsafe based on past experiences of bullying.

“if it’s unstructured I would I would generally I’d urm sit by myself somewhere where I know you know I’m sort of reasonably safe” (Group 1)

Participants also described finding groups more difficult than one to one friendships and were very astute at recognising how one type of social interaction could lead to another, which is less desirable.

“one of my fears about groups is if I’m with someone I know and then like we went out to town or something and then they saw their other friends and start talking to them then I’d sort of be on the outside whilst they were talking cause I don’t know them and don’t do well with meeting new people that’s then I would then feel uncomfortable and not sort of join in so then sort of just be on my own”

Some participants spoke about social media as a preferable method of socialising. It was described as minimising the complexity usually associated with social interactions, in particular non-verbal communication which many participants reported struggling with.

“I would urm like ill use my phone or stuff rather than talk to other people I would communicate through Facebook rather than talking to them face to face and urm I feel almost like of course I’m socialising is pretty difficult”

Participants recognised that university holds a number of social experiences that are unique to that context. One group spoke about Fresher’s week, a prominent social event unique to university. They spoke about fresher’s week as combining many of the different challenges and fears they have related to socialising.

“I think like fresher’s week is probably my biggest fear really”

“I think urm cause fresher’s week is quite busy isn’t it and there’s lots of people round and like again I struggle with groups or being in a crowd and that sort of thing so I’m sort of gunna be very anxious that week I think and an sort of gunna be quite on edge” (Group 1)

"I'm worried about really social flatmates, like people who have people over all the time...It can get just awkward if they're constantly around but you don't know them cause you have no reason to connect"

Their place within the social world: Socialising was highlighted as one of the biggest concerns that participants had about starting university. Participants spoke about experiencing bullying in the past and how that has led them to view socializing as dangerous and exposing.

"I don't think urm I'm necessarily worried about getting bullied or anything at university I think its more I'm its made me more cautious so and change my attitude towards you know my confidence in social situations because I know it can happen I'm more weary and slightly paranoid about being in those situations"

"I've become a lot less inclined to put my to risk putting myself in those situations I now don't do it because I worry about it happening even though I know its unlikely to I don't want to risk it happening again"

Participants discussed the barriers to integrating successfully into the social world at university. Many reported worrying about doing or saying the wrong thing and the social consequences of that.

"I don't know how to act properly I just stand there like a lemon"

"If you do take things literally which is what I do that you'll sort of get teased ... and like if you don't get the jokes or you know if your not very good and sarcasm or anything like that so I'm a bit worried" (Group 1)

"It's hard its really its hard work its just that it'd be easier not to have friends because then you wouldn't have to put the effort in ... If I'm writing a text I have to think about why I'm writing the text because ... I have a tendency to write spiels of everything... you have to fight not to because things go wrong"

This extended to understanding social norms at university generally. Participants demonstrated a conscious effort to pre-empt how they should behave in relation to different aspects of university life that others may not consider.

"There's like several stairways in between the shower and... I'm not sure what should I do. Should I get changed after immediately after I get a shower in the bathroom or go up in a towel?"

Across all groups participants spoke about their perception of themselves within the social world. They spoke about 'looking foolish' or 'stupid', 'being a terrible person', 'a nightmare housemate' or being a 'loner'.

"it took me them actually saying to me why don't you talk to anyone to actually realise that I was being that terrible person who was just sitting there making everything awkward so its just hard"
(Group 2)

"a lot of pupils want to hang out with others and I sometimes feel left out which is where the loner part comes in" (Group 3)

Despite these challenges participants spoke about a desire to be part of the social world and a fear of being isolated if they cannot achieve this.

"I'm looking forward to it (University) if I can make friends and do the social side of it but I know that if I can't its just gunna be an absolute nightmare"

Surviving the social world: Participants described a number of strategies that they planned to use to negotiate the aforementioned challenges at university. Two main perspectives emerged. The first involved strategies to minimise or avoid social interactions altogether. Although many participants endorsed this as a strategy there was also recognition of the consequences it has socially.

I feel uncomfortable doing in a social situation so ill say you know I need to go and talk to my tutor or something when I don't just because I don't wanna you know be hang around too long and I struggle with it and I then people start feeling like well he's a bit you know they don't believe you after a while cuz its you do it if you do it too often which is several times is considered too often they then start disbelieving you and thinking that you're just trying to get out of it which you are but then they're not as necessarily as friendly as they would have been

The second perspective was of university as a fresh start, which held the potential for social experiences different to those previously experienced. Participants described plans to become involved in clubs and societies and take more 'risks' when socialising.

" over the coming year I'm going to try and go into social situations more and I think the more that they're positive the more confident ill get...I'm worried but I'm also sort of interested to see whether my fears will you know grip or if you know they don't have any basis "

Academic Concerns

Participants described feeling excited about the academic component of university. Participants spoke about being taught by experts in the field and focusing on a subject that they enjoy.

“for the first time you know I sort of get the sense that the people who are going to be teaching me are actually sort of proper scientists who are actually writing a paper right now”

However there was also recognition that university would be more demanding academically and participant’s worried about not succeeding

“uni is much harder then A-level and you have to come in after how many months of doing nothing at the top end already and it just a few steps below absolute master of that field and you have got to preform at that level ...and if you can't do that level then you've paid 9000 pounds to say oh I've failed a course”

“even if I work really well and study hard it still might not be enough (.) my best isn't god enough that sort of worry”

The main area’s participants anticipated struggling with included time management, meeting deadlines and managing different demands.

“my problems gunna be the self motivation you know getting up and writing in that moment or that sort of thing I mean I struggle sort of at best I'm (inaudible) along piece of work or if your researching something and I think I'm gunna have to try and develop the skill to stick at it and not just go oh that's enough for today ill do the rest tomorrow”

“I can obsess over something and just threat about it to the point that you know everything else pails into insignificance”

“I've done that where like I was just that one piece of coursers work or something that you just cannot get and you find yourself concentrating so much on it you realise too late that you've let everything else slide”

In contrast some participants felt that university may be less challenging in relation to these things because courses are more focused

“I think universities gunna be better for that actually because ... its all one subjectyou've got only got to think you know about one subject you feel specialised and its it's going to be easier”

Some participants described strategies they hoped to use at university to manage these difficulties.

“I tried this technique where you take um fifty minutes and the five minute gap um work”

“I’m going to have to try and get a get a timetable (inaudible) saying you know these are the days where I’ve got an assignment I will try and at least start them and write may be half of it sort of thing you know and um dedicate cert to sort of you know certain times sort of thing to start them”

Leaving The Scaffolding Of Home

Participants described family as providing support, predictability, reassurance and prompting and they shared worries about the loss of these aspects of home life when moving to University. Participants spoke about how families provide a safe stable place that is separate to the outside world. However at university these boundaries are not as clear and there is less separation between home, academic and social lives.

“friendship bonds they’re less stable than family bonds, there’s not a link in the background that’s always there its more dependent on what you do its more if something goes wrong it might seriously cause problems whereas at home you’ve got family and school are separate entities”

Participants described how family support provides scaffolding, which compensates for some of the difficulties they experience due to ASD. Family members provide support and encouragement to face and overcome difficulties engaging socially.

“for me at least that’s [socializing] no longer as much of an issue.....I have two older sisters and they have the tendency to like throw me in at the deep end with a load of people I didn’t know”

They described parent’s use of prompting around time-management and schoolwork and noted the difference in support and structure around managing the academic demands at university compared to at home and at college.

“through like my A levels my dad really helped and helped me to get coursework in on time”

“not having or people that you have at home to kind of encourage you to do your work and having to motivate yourself”

“the big thing is going to be that you don’t have... teachers or whatever to look over your work to make sure it’s done right”

Leaving home also brings changes in routine and predictability. This extended from small changes in how the day is organised to the loss of valued activities that make up home life

“you might be used to having you’re dinner at like five or something but you might have to have it later at university and like small things can affect your routine”

“for me it’s like getting out of bed and sorting the animals out at home and if I go to university I won’t be able to that and yeah that sort of that will be a massive change I think”

Furthermore changes in predictability did not just relate to routines but also the predictability of family members and their reactions.

“I can predict my parents pretty well after eighteen years so I can sort of judge how they’re going to react to different situations and I like that it means I don’t have to fret about what’s going to happen if I say something or if I do something [wrong]”

Transition to Adulthood

Despite the concerns about leaving the safety of home life (described above) there was also a sense that starting university represents a transition towards adulthood and holds the potential for developing independence and having new experiences.

“I think it [university] will be positive as it will help you to live independently and prepare you for adult life in the future”

“at school you’d have your parents and teachers and that but then you’d just have the teachers here [University] and like you kind of like build up like its taking the crutch away as it were”

University was also described as helping people pursue their interests and move towards their desired career

“moving on with your life actually starting to think about careers and what you actually want to do ... it’s sort of scary stuff to do but soon as I decided what I wanted to do then that’s fine I want to go do that ”

Practicalities' about starting University

Practical concerns could broadly be divided into two categories, those relating to the transition to university and those relating to on going life at university. Participants spoke about being concerned about the first month at university.

"I'm gunna struggle quite a bit in that first month or so"

Participants described the anxiety caused by having to move to an unfamiliar place and difficulties with finding their way around.

"If I go into a place I don't know I get quite anxious" (group 1) "the trouble with a big city or anywhere you're unfamiliar with, it's a lot more like dangerous" (group 2)

Some participants discussed plans to get in touch with disability services within the university. Many of the participants spoke about having co-morbid difficulties such as Dyslexia and Dyspraxia that interfere with their learning. Although support was available at the university participants were concerned about falling behind in the interim time between starting university and these supports being put in place.

"my biggest worry is the first month or so before you know the disability allowance gets me this all this equipment because I know that I'm going struggle because my working memory is so appalling I cannot take notes in lectures"

Participants spoke about the need to develop practical skills such as getting groceries, cooking, budgeting effectively and being responsible for buying toiletries and cleaning products and maintaining a clean house. There were varying levels of confidence amongst participants around being able to manage these things and they differed on what elements worried them most. However a theme running through this was anxiety about organising all these different elements.

"you are totally learning to live independently by yourself and urm you've got to do things like manage your money get your work in on time and all that kind of stuff"

A number of participants spoke about feeling less worried about practical issues related to university because they have been practicing some of the necessary skills at home.

"I use to be really homesick but I go away for weekends quite regularly by myself now so I'm a lot more use to it"

“I’m less concerned about the management of my money things because I got forced into managing myself when I started sixth form so I’ve already done it (Group 3)

Discussion

The themes that emerged from the focus group included The Social World, Leaving the Scaffolding of Home, Transition Towards Adulthood, Academic Demands; Practicalities of University Living. Social difficulties amongst those with ASD are well documented in the literature (Frith and Hill 2004), however the focus group provided an insight into the lived experience of those with ASD. They illustrated the amount of thought and effort that goes into consciously negotiating the social world. Students with ASD are required to understand social norms, behave appropriately and manage concerns about rejection by peers. In doing this participants have constructed a map of the social world that differentiates between what is a manageable and unmanageable, predictable and unpredictable, safe and unsafe. Participants described two main strategies for social interaction; avoidance and engagement. A factor that was frequently referenced in explaining choice of strategy was bullying, which is commonly reported amongst those with ASD (Cappadocia, Weiss, & Pepler, 2012; Humphrey & Symes, 2010). Many participants attributed a fear of engaging socially to previous experiences of bullying and the resulting perception that socialising is risky and dangerous.

Furthermore participants demonstrated awareness into the impact their social difficulties have on how they are seen by their peers. This insight served to increase social anxiety and negative self-image, which creates further barriers to social interaction and increases the potential for isolation (Chang, Quan & Wood, 2012). This is in line with research, which suggests that the risk of developing anxiety increases amongst those with high functioning autism as their awareness that they are different and have social weaknesses increases (Connors 2007). The interplay of environmental factors such as bullying and social anxiety adds support for the idea that some social difficulties in ASD are socially constructed (Molloy & Vasil, 2002).

In addition to concerns related to socialising, participants described a number of academic and practical concerns, relating both to the initial transition and on going life at university. Families were described as fulfilling an important role in helping students manage these challenges as well as providing predictable and stable platform separate from the social world. In line with participant’s worries about the

loss of family support, studies have indicated that those with ASD can find it difficult to use and maintain independent living skills without prompting and support most often provided by family (Taylor & Seltzer, 2011; Tobias, 2009). University can therefore represent a time when participants have less support and resources whilst also being faced with increased demands. Despite these challenges, many participants viewed University as a fresh start and a gateway into adulthood. Participants also seemed to be taking an active role in this with many describing new strategies that they hoped to try at university. Hence with the right support, university may provide a unique opportunity for students with ASD to develop independent living skills, follow their career aspirations whilst also providing them with positive social experiences, a more positive social identity, and perhaps remediate the negative impact of previous bullying. However current outcomes for students with ASD attending university suggest that this is not being achieved (Glennon, 2001; VanBergeijk, Klin, & Volkmar, 2008). The qualitative results also offer a number of ways students with ASD may better be supported (See table 1).

Table 1: Recommendations based on the themes from the qualitative analysis

Theme	Recommendations
The Social World	<ul style="list-style-type: none"> • signpost students with ASD to clubs and societies that have more structured activities, • provision of an online forum for students to interact with each other and get support
Transition from family life to university	<ul style="list-style-type: none"> • provide specifically designed support to assist with the initial transition focusing on adjustment to a new routine and unfamiliar place; followed by on-going support that may address issues such as support with meeting academic demands, budgeting and daily tasks of living. • one to one student mentoring to provide some of the scaffolding originally provided by family relationships. • Supporting timely access to support services
Independent living skills	<ul style="list-style-type: none"> • School programs that give students an opportunity to develop these skills should be encouraged as well as providing support to families to encourage students with ASD to develop and practice skills such as cooking, shopping, budgeting and time management. • Support in finding, applying and interviewing for part-time job
Academic demands	<ul style="list-style-type: none"> • Educating university tutors and staff about the needs of students with ASD and what supports and allowances might be necessary to help them maximize their potential.

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Appendix 4: Beliefs about Hoarding-Revised

This questionnaire attempts to examine the beliefs and functions associated with possessions. It will look at these beliefs in relation to acquiring, keeping and throwing away possessions (the three features of compulsive hoarding). It also makes the distinction between beliefs and functions that are positive and reinforcing and beliefs and functions that serve to avoid negative or feared consequence.

Beliefs About Hoarding-Revised

Over the past two weeks when I was thinking about my ordinary possessions:

	I did not believe this idea at all		I was completely convinced this idea was true
1. I will be rejecting someone connected to this possession if I don't look after it properly	0	10 20 30 40 50 60 70 80 90	100
2. I have acquired items that might help me remember something important	0	10 20 30 40 50 60 70 80 90	100
3. If I don't acquire this item then something awful might happen	0	10 20 30 40 50 60 70 80 90	100
4. This possession is my friend so I must keep it	0	10 20 30 40 50 60 70 80 90	100
5. I feel a sense of achievement or mastery when I look at all my possessions	0	10 20 30 40 50 60 70 80 90	100
6. I can't throw things like this away because it might cause harm to come to someone I care for	0	10 20 30 40 50 60 70 80 90	100
7. I will throw this item out only when it feels completely right to throw it out	0	10 20 30 40 50 60 70 80 90	100
8. Many of my possessions remind me of a happy time or someone I care about so I must keep them	0	10 20 30 40 50 60 70 80 90	100

9. It is important to keep this to make sure that nothing bad happens	0	10 20 30 40 50 60 70 80 90	100
10. Buying new things is the only way to make myself feel better	0	10 20 30 40 50 60 70 80 90	100
11. This possession will be hurt if I don't take care of it	0	10 20 30 40 50 60 70 80 90	100
12. I must keep this item because I would have been grateful for it in the past	0	10 20 30 40 50 60 70 80 90	100
13. I cannot stand the idea that I would be blamed for not having something important even if it seemed ordinary at the time I got rid of it	0	10 20 30 40 50 60 70 80 90	100
14. It is my responsibility to protect the value of each of my possessions	0	10 20 30 40 50 60 70 80 90	100
15. Obtaining new possessions helps me get closer to the person I want to be	0	10 20 30 40 50 60 70 80 90	100
16. It would be upsetting if I threw this item out without being sure it will be put to good use	0	10 20 30 40 50 60 70 80 90	100
17. Not buying it would be cruel to the object	0	10 20 30 40 50 60 70 80 90	100
18. I see an importance in my possessions that others can't see	0	10 20 30 40 50 60 70 80 90	100
19. If I throw this away, it would be like losing part of myself	0	10 20 30 40 50 60 70 80 90	100
20. If I get rid of this item it is like abandoning someone I love	0	10 20 30 40 50 60 70 80 90	100
21. If I throw this out, I might be crippled by regret if I ever need it in the future	0	10 20 30 40 50 60 70 80 90	100
22. My possessions make me feel safe	0	10 20 30 40 50 60 70 80 90	100

23. If I see something I think is valuable I much own it	0	10 20 30 40 50 60 70 80 90	100
24. I have to buy this if there is even a very slight chance I will need it	0	10 20 30 40 50 60 70 80 90	100
25. I am responsible for finding a use for this item	0	10 20 30 40 50 60 70 80 90	100
26. Keeping my possessions stops me forgetting important information or people	0	10 20 30 40 50 60 70 80 90	100
27. If I don't buy this item I will continuously worry that I made the wrong decision	0	10 20 30 40 50 60 70 80 90	100
28. It would be disloyal to this item if I didn't take care of it	0	10 20 30 40 50 60 70 80 90	100
29. Each object is unique in the same way each person is unique	0	10 20 30 40 50 60 70 80 90	100
30. I must keep my possessions so nobody else can make use of them	0	10 20 30 40 50 60 70 80 90	100
31. I can see how valuable my possessions are although others can't	0	10 20 30 40 50 60 70 80 90	100
32. Buying new possessions stops me feeling like a failure	0	10 20 30 40 50 60 70 80 90	100
33. If I throw this possession away, it will be upsetting because it would be like throwing away a memory of my past	0	10 20 30 40 50 60 70 80 90	100
34. To throw this away would be cruel to the object	0	10 20 30 40 50 60 70 80 90	100
35. I like to maintain sole control of my possessions	0	10 20 30 40 50 60 70 80 90	100
36. This reminds me of someone I know so I can't let it come to harm	0	10 20 30 40 50 60 70 80 90	100

37. My possessions distract me from difficult thoughts and feelings	0	10 20 30 40 50 60 70 80 90	100
38. I can't throw this away because I'd be throwing away an opportunity which could change my life	0	10 20 30 40 50 60 70 80 90	100
39. If something is free then it would be very upsetting not to get it	0	10 20 30 40 50 60 70 80 90	100
40. I can't throw this away because it has a special meaning for me	0	10 20 30 40 50 60 70 80 90	100
41. I must have this item if it reminds me of a happy time or a special person	0	10 20 30 40 50 60 70 80 90	100
42. If harm comes to this possession, that means that harm will come to the person connected to it	0	10 20 30 40 50 60 70 80 90	100
43. My possessions help me to feel in control	0	10 20 30 40 50 60 70 80 90	100
44. I would feel terrible if I got rid of this item because it would be wasteful to do so	0	10 20 30 40 50 60 70 80 90	100
45. My possessions are part of who I am	0	10 20 30 40 50 60 70 80 90	100
46. This will cause someone harm unless I keep it	0	10 20 30 40 50 60 70 80 90	100
47. My possessions stop me feeling lonely	0	10 20 30 40 50 60 70 80 90	100
48. I would be extremely upset if I didn't keep something which might come in handy someday	0	10 20 30 40 50 60 70 80 90	100
49. It feels extremely exhilarating and exciting to get even basic ordinary items to add to my things	0	10 20 30 40 50 60 70 80 90	100
50. Many of my possessions are linked to someone I care about, so it would be very distressing to lose	0	10 20 30 40 50 60 70 80 90	100

them			
51. I would be no-one without all my possessions	0	10 20 30 40 50 60 70 80 90	100

Coding

- **Beliefs associated with hoarding:**

Material Deprivation: 12, 24, 38, 39, 44, 48,

Attachment: 1, 4, 11, 17, 20, 28, 34, 36, 40, 41,

Harm Avoidance: 3, 6, 7, 9, 13, 42, 46,

Memory: 2, 8, 26, 33, 50,

Identity: 5, 15, 19, 32, 45, 51

Custodian of value/ responsibility for value/control: 14, 16, 18, 23, 25, 29, 30, 31, 35,

Emotional avoidance: 10, 21, 22, 27, 37, 43, 47, 49,

Appendix 5: Effects of Hoarding Questionnaire

The following statements are about the effects hoarding can have on you. Thinking about how you have been over the last two weeks please rate how much in the last two weeks you believed the following statements to be true for you:

	I do not believe this idea at all												I am completely convinced this idea is true	
1. Having so many possessions prevents me from engaging activities that I value, such as leisure activities	0	10	20	30	40	50	60	70	80	90		100		
2. I am disgusted by my home	0	10	20	30	40	50	60	70	80	90		100		
3. I can't find items that I value due to the extent of the clutter.	0	10	20	30	40	50	60	70	80	90		100		
4. I fear I will lose my home because of the clutter	0	10	20	30	40	50	60	70	80	90		100		
5. I worry about the clutter in my home attracting vermin	0	10	20	30	40	50	60	70	80	90		100		
6. I am worried that my home is a fire risk	0	10	20	30	40	50	60	70	80	90		100		
7. My neighbours hate me because of the clutter in my home	0	10	20	30	40	50	60	70	80	90		100		
8. It bothers me that I can't use the rooms in my house for their intended purpose (e.g. cook in the kitchen; sleep in the bedroom)	0	10	20	30	40	50	60	70	80	90		100		
9. Looking at all the clutter in my house depresses me	0	10	20	30	40	50	60	70	80	90		100		
10. Buying new possessions has caused me to have financial problems	0	10	20	30	40	50	60	70	80	90		100		
11. Many of my relationships have been lost or damaged by my clutter	0	10	20	30	40	50	60	70	80	90		100		
12. It upsets me that I can't care for my home	0	10	20	30	40	50	60	70	80	90		100		

13. It bothers me that I can't have workers come in to repair things in my home due to the clutter	0	10	20	30	40	50	60	70	80	90	100	
14. I can't bear the thought of someone coming into my home because of all my possessions	0	10	20	30	40	50	60	70	80	90	100	
15. My physical health has suffered as a result of the clutter in my home	0	10	20	30	40	50	60	70	80	90	100	
16. When I look at my home I feel ashamed and embarrassed	0	10	20	30	40	50	60	70	80	90	100	
17. I worry that my home is dangerous	0	10	20	30	40	50	60	70	80	90	100	
18. My possessions stop me from being the kind of friend or family member I want to be	0	10	20	30	40	50	60	70	80	90	100	

Appendix 6: Desire to Change Questionnaire

Please rate how much in the last two weeks you believed the following statements to be true for you:

	I do not believe this idea at all											I am completely convinced this idea is true
1. I wish I could stop myself acquiring new possessions	0	10	20	30	40	50	60	70	80	90	100	
2. I have begun looking for ways to get help and support with my hoarding	0	10	20	30	40	50	60	70	80	90	100	
3. I have recently thrown away some of my possessions	0	10	20	30	40	50	60	70	80	90	100	
4. I wish I had a home that was free from clutter	0	10	20	30	40	50	60	70	80	90	100	
5. I bring too many new possessions into my home	0	10	20	30	40	50	60	70	80	90	100	
6. I have begun to organize the clutter in my home	0	10	20	30	40	50	60	70	80	90	100	
7. I have recently reduced the amount of things I am buying	0	10	20	30	40	50	60	70	80	90	100	
8. I would like to be able to start reducing the number of possessions that I own	0	10	20	30	40	50	60	70	80	90	100	
9. I think I have far too many possessions	0	10	20	30	40	50	60	70	80	90	100	
10. The amount of stuff in my home interferes with my life	0	10	20	30	40	50	60	70	80	90	100	
11. I enjoy having my possessions but think there is too much clutter	0	10	20	30	40	50	60	70	80	90	100	
12. I have spoken to friends, family member or health care worker about getting help with my hoarding	0	10	20	30	40	50	60	70	80	90	100	
13. I want to feel able to throw away some of the possessions in my home	0	10	20	30	40	50	60	70	80	90	100	

Coding

Problem Recognition: 5, 9, 10, 11,

Desire to Change: 1, 4, 8, 13

Actions towards Change: 2, 3, 6, 7, 12

Appendix 7: Hoarding Self-Efficacy Questionnaire

Thinking about areas of your home where there is clutter (for example under your bed or in a drawer or throughout your home) please rate how confident you are in your ability to take the following steps. Rate by circling a number from 0 to 100 using the scale given below:

	No confidence					Moderate confidence					Complete confidence	
1. Change the way I think and feel about my possessions (e.g. changing the belief that you should keep a possession)	0	10	20	30	40	50	60	70	80	90	100	
2. Cope with the difficult emotions caused by throwing away some of your possession	0	10	20	30	40	50	60	70	80	90	100	
3. Make a plan of how you would start to clear out the clutter in your home	0	10	20	30	40	50	60	70	80	90	100	
4. Throw away some of your possessions	0	10	20	30	40	50	60	70	80	90	100	
5. Resist the impulse to buy or get new items	0	10	20	30	40	50	60	70	80	90	100	
6. Stay focused for long enough to organise some of your possessions	0	10	20	30	40	50	60	70	80	90	100	
7. Talk about your thoughts and feelings with someone else (e.g. a friend or a healthcare professional)	0	10	20	30	40	50	60	70	80	90	100	
8. Decide what possessions are important to keep and which ones should be thrown away	0	10	20	30	40	50	60	70	80	90	100	
9. Allow someone into your home to help you organise your possessions	0	10	20	30	40	50	60	70	80	90	100	

10. Pursue other interest or valued activities (e.g. leisure activities, work or family roles) unrelated to my possessions	0	10	20	30	40	50	60	70	80	90	100
11. Not get distracted when trying to sort out your clutter	0	10	20	30	40	50	60	70	80	90	100

Thinking about the medium to long term, please rate how confident you are that you could do the following

	No confidence					Moderate confidence					Complete confidence
1. I could have a home free of clutter	0	10	20	30	40	50	60	70	80	90	100
2. I could maintain a clean and organised house	0	10	20	30	40	50	60	70	80	90	100
3. I could find treatment or help that would be successful in reducing my hoarding behaviours	0	10	20	30	40	50	60	70	80	90	100

Appendix 8: Trauma Violence and Abuse, Author Guidelines

Trauma, Violence, & Abuse is devoted to organizing, synthesizing, and expanding knowledge on all force of trauma, abuse, and violence. This peer-reviewed journal is practitioner oriented and will publish only reviews of research, conceptual or theoretical articles, and law review articles. *Trauma, Violence, & Abuse* is dedicated to professionals and advanced students in clinical training who work with any form of trauma, abuse, and violence. It is intended to compile knowledge that clearly affects practice, policy, and research.

TVA does not publish case studies nor reports of individual research studies.

TVA accepts comprehensive reviews of research, legal cases, or conceptual and theoretical developments in any aspect of trauma, violence or abuse. Each manuscript must begin with a clear description of the knowledge area that is being researched or reviewed and its relevance to understanding or dealing with trauma, violence, or abuse. Each review manuscript must also provide a clear discussion of the limits of the knowledge which has been reviewed, and must include two summary tables; one of critical findings and the other listing implications of the review for practice, policy, and research. The tables, which summarize critical findings and implications for practice, policy and research, must accompany submission.

Manuscripts should be prepared in APA style and may be up to forty typed double spaced pages in length. All manuscripts are peer reviewed and should be submitted with a letter indicating that the material has not been published elsewhere and is not under review at another publication. Manuscripts should be submitted electronically to <http://mc.manuscriptcentral.com/tva> where authors will be required to set up an online account on the SageTrack system powered by ScholarOne. Inquiries may be made by e-mail at contej@u.washington.edu or fax at 206-543-1228.

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Manuscripts should be prepared using the *APA Style Guide* (Sixth Edition). All pages must be typed, double-spaced (including references, footnotes, and endnotes). Text must be in 12-point Times Roman. Block quotes may be single-spaced. Must include margins of 1 inch on all the four sides and number all pages sequentially.

The manuscript should include four major sections(in this order): Title Page, Abstract, Main Body, and References.

Sections in a manuscript may include the following (in this order): (1) Title page, (2) Abstract, (3) Keywords, (4) Text, (5) Notes, (6) References, (7) Tables, (8) Figures, and (9) Appendices.

1. Title page. Please include the following:

- Full article title
- Acknowledgments and credits
- Each author's complete name and institutional affiliation(s)

- Grant numbers and/or funding information
- Corresponding author (name, address, phone/fax, e-mail)

2. **Abstract.** Print the abstract (150 to 250 words) on a separate page headed by the full article title. Omit author(s)'s names.

3. **Text.** Begin article text on a new page headed by the full article title.

a. **Headings and subheadings.** Subheadings should indicate the organization of the content of the manuscript. Generally, three heading levels are sufficient to organize text. Level 1 heading should be Centered, Boldface, Upper & Lowercase, Level 2 heading should be Flush Left, Boldface, Upper & Lowercase, Level 3 heading should be Indented, boldface, lowercase paragraph heading that ends with a period, Level 4 heading should be Indented, boldface, italicized, lowercase paragraph heading that ends with a period, and Level 5 heading should be Indented, italicized, lowercase paragraph heading that ends with a period.

b. **Citations.** For each text citation there must be a corresponding citation in the reference list and for each reference list citation there must be a corresponding text citation. Each corresponding citation must have identical spelling and year. Each text citation must include at least two pieces of information, author(s) and year of publication. Following are some examples of text citations:

(i) **Unknown Author:** To cite works that do not have an author, cite the source by its title in the signal phrase or use the first word or two in the parentheses. Eg. The findings are based on the study was done of students learning to format research papers ("Using XXX," 2001)

(ii) **Authors with the Same Last Name:** use first initials with the last names to prevent confusion. Eg.(L. Hughes, 2001; P. Hughes, 1998)

(iii) **Two or More Works by the Same Author in the Same Year:** For two sources by the same author in the same year, use lower-case letters (a, b, c) with the year to order the entries in the reference list. The lower-case letters should follow the year in the in-text citation.Eg.Research by Freud (1981a) illustrated that...

(iv) **Personal Communication:** For letters, e-mails, interviews, and other person-to-person communication, citation should include the communicator's name, the fact that it was personal communication, and the date of the communication. Do not include personal communication in the reference list. Eg.(E. Clark, personal communication, January 4, 2009).

(v) **Unknown Author and Unknown Date:** For citations with no author or date, use the title in the signal phrase or the first word or two of the title in the parentheses and use the abbreviation "n.d." (for "no date"). Eg. The study conducted by of students and research division discovered that students succeeded with tutoring ("Tutoring and APA," n.d.).

5. **Notes.** If explanatory notes are required for your manuscript, insert a number formatted in superscript following almost any punctuation mark. Footnote numbers should not follow dashes (—), and if they appear in a sentence in parentheses, the footnote number should be inserted within the parentheses. The Footnotes should be added at the bottom of the page after the references. The word "Footnotes" should be centred at the top of the page.

6. **References.** Basic rules for the reference list:

- The reference list should be arranged in alphabetical order according to the authors' last names.
- If there is more than one work by the same author, order them according to their publication date – oldest to newest (therefore a 2008 publication would appear before a 2009 publication).
- When listing multiple authors of a source use "&" instead of "and".
- Capitalize only the first word of the title and of the subtitle, if there are one, and any proper names – i. e. only those words that are normally capitalized.
- Italicize the title of the book, the title of the journal/serial and the title of the web document.

- Manuscripts submitted to XXX [journal acronym] should strictly follow the XXX manual (xth edition) [style manual title with ed].
- Every citation in text must have the detailed reference in the Reference section.
- Every reference listed in the Reference section must be cited in text.
- Do not use “et al.” in the Reference list at the end; names of all authors of a publication should be listed there.

Here are a few examples of commonly found references. For more examples please check *APA*(6th Ed).

Books:

Book with place of publication--Airey, D. (2010). *Logo design love: A guide to creating iconic brand identities*. Berkeley, CA: New Riders.

Book with editors & edition-- Collins, C., & Jackson, S. (Eds.). (2007). *Sport in Aotearoa/New Zealand society*. South Melbourne, Australia: Thomson.

Book with author & publisher are the same-- MidCentral District Health Board. (2008). *District annual plan 2008/09*. Palmerston North, New Zealand: Author.

Chapter in an edited book--Dear, J., & Underwood, M. (2007). What is the role of exercise in the prevention of back pain? In D. MacAuley & T. Best (Eds.), *Evidence-based sports medicine* (2nd ed., pp. 257-280). Malden, MA: Blackwell.

Periodicals:

Journal article with more than one author (print)--Gabbett, T., Jenkins, D., & Abernethy, B. (2010). Physical collisions and injury during professional rugby league skills training. *Journal of Science and Medicine in Sport*, 13(6), 578-583.

Journal article – 8 or more authors-- Crooks, C., Ameratunga, R., Brewerton, M., Torok, M., Buetow, S., Brothers, S., ... Jorgensen, P. (2010). Adverse reactions to food in New Zealand children aged 0-5 years. *New Zealand Medical Journal*, 123(1327). Retrieved from <http://www.nzma.org.nz/journal/123-1327/4469/>

Internet Sources:

Internet – no author, no date--Pet therapy. (n.d.). Retrieved from http://www.holisticonline.com/stress/stress_pet-therapy.htm

Internet – Organisation / Corporate author-- SPCA New Zealand. (2011). *Your dog may be dying from the heat* [Press release]. Retrieved from

<http://www.rnzspca.org.nz/news/press-releases/360-your-dog-may-be-dying-from-the-heat>

Examples of various types of information sources:

Act (statute / legislation)--Copyright Act 1994. (2011, October 7). Retrieved from <http://www.legislation.govt.nz>

Blog post-- Liz and Ellory. (2011, January 19). *The day of dread(s)* [Web log post]. Retrieved from

<http://www.travelblog.org/Oceania/Australia/Victoria/Melbourne/St-Kilda/blog-669396.html>

Brochure / pamphlet (no author)--Ageing well: How to be the best you can be [Brochure]. (2009). Wellington, New Zealand: Ministry of Health.

Conference Paper--Williams, J., & Seary, K. (2010). *Bridging the divide: Scaffolding the learning experiences of the mature age student*. In J. Terrell (Ed.), *Making the links: Learning, teaching and high quality student outcomes. Proceedings of the 9th Conference of the New Zealand Association of Bridging Educators* (pp. 104-116). Wellington, New Zealand.

DVD / Video / Motion Picture (including Clickview&Youtube)--Gardiner, A., Curtis, C., & Michael, E. (Producers), & Waititi, T. (Director). (2010). *Boy: Welcome to my interesting world [DVD]*. New Zealand: Transmission.

Magazine--Ng, A. (2011, October-December). *Brush with history*. *Habitus*, 13, 83-87.

Newspaper article (no author)--*Little blue penguins homeward bound*. (2011, November 23). *Manawatu Standard*, p. 5

Podcast (audio or video)--Rozaieski, B. (2011). *Logan cabinet shoppe: Episode 37: Entertainment center molding [Video podcast]*. Retrieved from <http://blip.tv/xxx>

Software (including apps--UBM Medica.(2010). *iMIMS (Version 1.2.0) [Mobile application software]*. Retrieved from <http://itunes.apple.com>

Television programme--Flanagan, A., & Philipson, A. (Series producers & directors).(2011). *24 hours in A & E [Television series]*. Belfast, Ireland: Channel 4.

Thesis (print)--Smith, T. L. (2008). *Change, choice and difference: The case of RN to BN degree programmes for registered nurses (Master's thesis)*. Victoria University of Wellington, Wellington, New Zealand.

Thesis (online)--Mann, D. L. (2010). *Vision and expertise for interceptive actions in sport (Doctoral dissertation, The University of New South Wales, Sydney, Australia)*. Retrieved from <http://handle.unsw.edu.au/1959.4/44704>

Non- English reference book, title translated in English

Real Academia Espanola. (2001). *Diccionario de la lengua espanola [Dictionary of the Spanish Language]* (22nd ed.). Madrid, Spain: Author

IMPORTANT NOTE: To encourage a faster production process of your article, you are requested to closely adhere to the points above for references. Otherwise, it will entail a long process of solving copyeditor's queries and may directly affect the publication time of your article. In case of any question, please contact the journal editor at contej@u.washington.edu

7. Tables. They should be structured properly. Each table must have a clear and concise title. When appropriate, use the title to explain an abbreviation parenthetically. Eg. Comparison of Median Income of Adopted Children (AC) v. Foster Children (FC). Headings should be clear and brief.

8. Figures. They should be numbered consecutively in the order in which they appear in the text and must include figure captions. Figures will appear in the published article in the order in which they are numbered initially. The figure resolution should be 300dpi at the time of submission.

IMPORTANT: PERMISSION - The author(s) are responsible for securing permission to reproduce all copyrighted figures or materials before they are published in (*journal acronym*). A copy of the written permission must be included with the manuscript submission.

9. Appendices. They should be lettered to distinguish from numbered tables and figures. Include a descriptive title for each appendix (e.g., "Appendix A. Variable Names and Definitions"). Cross-check text for accuracy against appendices.

Appendix 9: Autism, Author Guidelines

Manuscript Submission Guidelines: *Autism: The International Journal of Research and Practice*

1. [Peer review policy](#)
2. [Article types](#)
3. [How to submit your manuscript](#)
4. [Journal contributor's publishing agreement](#)
 - 4.1 [SAGE Open](#)
5. [Declaration of conflicting interests policy](#)
6. [Other conventions](#)
7. [Acknowledgments](#)
 - 7.1 [Funding acknowledgement](#)
8. [Permissions](#)
9. [Manuscript style](#)
 - 9.1 [File types](#)
 - 9.2 [Journal style](#)
 - 9.3 [Reference style](#)
 - 9.4 [Manuscript preparation](#)
 - 9.4.1 [Keywords and abstracts: Helping readers find your article online](#)
 - 9.4.2 [Corresponding author contact details](#)
 - 9.4.3 [Guidelines for submitting artwork, figures and other graphics](#)
 - 9.4.4 [Guidelines for submitting supplemental files](#)
 - 9.4.5 [English language editing services](#)
10. [After acceptance](#)
 - 10.1 [Proofs](#)
 - 10.2 [E-Prints and complimentary copies](#)
 - 10.3 [SAGE production](#)
 - 10.4 [OnlineFirst publication](#)
11. [Further information](#)

Autism provides a major international forum for research of direct and practical relevance to improving the quality of life for individuals with autism or autism-related disorders.

1. Peer review policy

Autism operates a strictly anonymous peer review process in which the reviewer's name is withheld from the author and, the author's name from the reviewer. The reviewer may at their own discretion opt to reveal their name to the author in their review but our standard policy practice is for both identities to remain concealed. Each new submission is carefully read by one of the Editors to decide whether it has a reasonable chance of getting published. If the Editor thinks it does not have this chance, at least one other Editor will be consulted before finally deciding whether or not to send the manuscript out for review. *Autism* strives to do this within two weeks after submission, so that authors do not have to wait long for a rejection. Feedback is also provided on how to improve the manuscript, or what other journal would be more suitable. Each manuscript is reviewed by at least two referees. All manuscripts are reviewed as rapidly as possible, and an editorial decision is generally reached within (e.g.) 6-8 weeks of submission.

[Back to top](#)

2. Article types

The Journal considers the following kinds of article for publication:

1. Research Reports, describing new experimental findings;
 - (a) *Full papers*
 - (b) *Short reports requiring rapid dissemination (2,000 words maximum, no more than 2 tables and 15 short references)*

2. Review Articles. The Editors wish to encourage the following types of review, but request that authors contact them in advance:

(a) general reviews that provide a synthesis of an area of autism research;

(b) critiques - focused and provocative reviews that are followed by a number of invited commentaries, with a concluding reply from the main author;

3. Letters to the Editors. Readers' letters should address issues raised by published articles or should report significant new findings that merit rapid dissemination. The decision to publish is made by the Editors, in order to ensure a timely appearance in print. **Letters should be no more than 800 words, with no tables and a maximum of 5 references.**

4. Book Reviews. A list of up-to-date books for review is available from the Journal's Editorial Manager.

Full papers are generally restricted to a maximum of 6,000 words, including all elements (title page, abstract, notes, references, tables, biographical statement, etc.). We are reluctant to burden our referees with very long manuscripts. Editors may ask authors to make certain cuts before sending the article out for review.

[Back to top](#)

3. How to submit your manuscript

Before submitting your manuscript, please ensure you carefully read and adhere to all the guidelines and instructions to authors provided below. Manuscripts not conforming to these guidelines may be returned.

Autism is hosted on SAGEtrack a web based online submission and peer review system powered by ScholarOne™ Manuscripts. Please read the Manuscript Submission guidelines below, and then simply visit <http://mc.manuscriptcentral.com/autism> to login and submit your article online.

IMPORTANT: Please check whether you already have an account in the system before trying to create a new one. If you have reviewed or authored for the journal in the past year it is likely that you will have had an account created. For further guidance on submitting your manuscript online please visit ScholarOne [Online Help](#).

All papers must be submitted via the online system. If you would like to discuss your paper prior to submission, please refer to the contact details below.

[Back to top](#)

4. Journal contributor's publishing agreement

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4.1 SAGE Open

If you wish your article to be freely available online immediately upon publication (as some funding bodies now require), you can opt for it to be included in SAGE Open subject to payment of a publication fee. The manuscript submission and peer reviewing procedure is unchanged. On acceptance of your article, you will be asked to let SAGE know directly if you are choosing SAGE Open. For further information, please visit [SAGE Open](#).

[Back to top](#)

5. Declaration of conflicting interests

Within your Journal Contributor's Publishing Agreement you will be required to make a certification with respect to a declaration of conflicting interests. *Autism* does not require a declaration of conflicting interests but recommends you review the good practice guidelines on the [SAGE Journal Author Gateway](#).

[Back to top](#)

6. Other conventions

We would prefer to use the term 'people with autism' or 'people with autism spectrum disorders or conditions'. We would also prefer the term 'typically developing' rather than 'normal'.

[Back to top](#)

7. Acknowledgements

Any acknowledgements should appear first at the end of your article prior to your Declaration of Conflicting Interests (if applicable), any notes and your References.

All contributors who do not meet the criteria for authorship should be listed in an 'Acknowledgements' section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Authors should disclose whether they had any writing assistance and identify the entity that paid for this assistance.

7.1 Funding Acknowledgement

To comply with the guidance for Research Funders, Authors and Publishers issued by the Research Information Network (RIN), *Autism* additionally requires all Authors to acknowledge their funding in a consistent fashion under a separate heading. All research articles should have a funding acknowledgement in the form of a sentence as follows, with the funding agency written out in full, followed by the grant number in square brackets:

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Multiple grant numbers should be separated by comma and space. Where the research was supported by more than one agency, the different agencies should be separated by semi-colon, with "and" before the final funder. Thus:

This work was supported by the Wellcome Trust [grant numbers xxxx, yyyy]; the Natural Environment Research Council [grant number zzzz]; and the Economic and Social Research Council [grant number aaaa].

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Please include this information under a separate heading entitled "Funding" directly after any other Acknowledgements prior to your "Declaration of Conflicting Interests" (if applicable), any Notes and your References.

Important note: If you have any concerns that the provision of this information may compromise your anonymity dependent on the peer review policy of this journal outlined above, you can withhold this information until final accepted manuscript.

For more information on the guidance for Research Funders, Authors and Publishers, please visit: <http://www.rin.ac.uk/funders-acknowledgement>

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[Back to top](#)

9. Manuscript style

9.1 File types

Only electronic files conforming to the journal's guidelines will be accepted. Preferred formats for the text and tables of your manuscript are Word DOC, RTF, XLS. LaTeX files are also accepted. Please also refer to additional guideline on submitting artwork and supplemental files below.

9.2 Journal Style

Autism conforms to the SAGE house style. [Click here](#) to review guidelines on SAGE UK House Style

9.3 Reference Style

Autism operates a Sage Harvard reference style. [Click here](#) to review the guidelines on SAGE Harvard to ensure your manuscript conforms to this reference style.

9.4. Manuscript Preparation

The text should be double-spaced throughout and with a minimum of 3cm for left and right hand margins and 5cm at head and foot. Text should be standard 10 or 12 point.

9.4.1 Your Title, Keywords and Abstracts: Helping readers find your article online

The title, keywords and abstract are key to ensuring readers find your article online through online search engines such as Google. Please refer to the information and guidance on how best to title your article, write your abstract and select your keywords by visiting SAGE's Journal Author Gateway Guidelines on [How to Help Readers Find Your Article Online](#).

9.4.2 Corresponding Author Contact details

Provide full contact details for the corresponding author including email, mailing address and telephone numbers. Academic affiliations are required for all co-authors. These details should be presented separately to the main text of the article to facilitate anonymous peer review.

9.4.3 Guidelines for submitting artwork, figures and other graphics

For guidance on the preparation of illustrations, pictures and graphs in electronic format, please visit SAGE's [Manuscript Submission Guidelines](#).

If, together with your accepted article, you submit usable colour figures, these figures will appear in colour online regardless of whether or not these illustrations are reproduced in colour in the printed version. If a charge applies you will be informed by your SAGE Production Editor. For specifically requested colour reproduction in print, you will receive information regarding the costs from SAGE after receipt of your accepted article.

9.4.4 Guidelines for submitting supplemental files

This journal is able to host approved supplemental materials online, alongside the full-text of articles. Supplemental files will be subjected to peer-review alongside the article. For more information please refer to SAGE's [Guidelines for Authors on Supplemental Files](#).

8. Permissions

Authors are responsible for obtaining permission from copyright holders for reproducing any illustrations, tables, figures or lengthy quotations previously published elsewhere. For further information including guidance on fair dealing for criticism and review, please visit our [Frequently Asked Questions](#) on the SAGE Journal Author Gateway.

[Back to top](#)

9. Manuscript style

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Only electronic files conforming to the journal's guidelines will be accepted. Preferred formats for the text and tables of your manuscript are Word DOC, RTF, XLS. LaTeX files are also accepted. Please also refer to additional guideline on submitting artwork and supplemental files below.

9.2 Journal Style

Autism conforms to the SAGE house style. [Click here](#) to review guidelines on SAGE UK House Style

9.3 Reference Style

Autism operates a Sage Harvard reference style. [Click here](#) to review the guidelines on SAGE Harvard to ensure your manuscript conforms to this reference style.

9.4. Manuscript Preparation

The text should be double-spaced throughout and with a minimum of 3cm for left and right hand margins and 5cm at head and foot. Text should be standard 10 or 12 point.

9.4.1 Your Title, Keywords and Abstracts: Helping readers find your article online

The title, keywords and abstract are key to ensuring readers find your article online through online search engines such as Google. Please refer to the information and guidance on how best to title your article, write your abstract and select your keywords by visiting SAGE's Journal Author Gateway Guidelines on [How to Help Readers Find Your Article Online](#).

9.4.2 Corresponding Author Contact details

Provide full contact details for the corresponding author including email, mailing address and telephone numbers. Academic affiliations are required for all co-authors. These details should be presented separately to the main text of the article to facilitate anonymous peer review.

9.4.3 Guidelines for submitting artwork, figures and other graphics

For guidance on the preparation of illustrations, pictures and graphs in electronic format, please visit SAGE's [Manuscript Submission Guidelines](#).

If, together with your accepted article, you submit usable colour figures, these figures will appear in colour online regardless of whether or not these illustrations are reproduced in colour in the printed version. If a charge applies you will be informed by your SAGE Production Editor. For specifically requested colour reproduction in print, you will receive information regarding the costs from SAGE after receipt of your accepted article.

9.4.4 Guidelines for submitting supplemental files

This journal is able to host approved supplemental materials online, alongside the full-text of articles. Supplemental files will be subjected to peer-review alongside the article. For more information please refer to SAGE's [Guidelines for Authors on Supplemental Files](#).

9.4.5 English Language Editing services

Appendix 10: Journal of Affective Disorders, Author Guidelines



JOURNAL OF AFFECTIVE DISORDERS

Official Journal of the International Society for Affective Disorders

GUIDE FOR AUTHORS

Description

The Journal of Affective Disorders publishes papers concerned with **affective disorders** in the widest sense: **depression, mania, anxiety and panic**. It is interdisciplinary and aims to bring together different approaches for a diverse readership. High quality papers will be accepted dealing with any aspect of affective disorders, including biochemistry, pharmacology, endocrinology, genetics, statistics, epidemiology, psychodynamics, classification, clinical studies and studies of all types of treatment.

BEFORE YOU BEGIN

Ethics in publishing

For information on Ethics in publishing and Ethical guidelines for journal publication see <http://www.elsevier.com/publishingethics> and <http://www.elsevier.com/journal-authors/ethics>.

Ethical Considerations

Authors of reports on human studies, especially those involving placebo, symptom provocation, drug discontinuation, or patients with disorders that may impair decision-making capability, should consider the ethical issues related to the work presented and include (in the Methods and Materials section of their manuscript) detailed information on the informed consent process, including the method or methods used to assess the subject's capacity to give informed consent, and safeguards included in the study design for protection of human subjects. Specifically, authors should consider all ethical issues relevant to their research, and briefly address each of these in their reports. When relevant patient follow-up data are available, this should also be reported. Specifically, investigators reporting on research involving human subjects or animals must have prior approval from an institutional review board. This approval should be mentioned in the methods section of the manuscript. In countries where institutional review boards are not available; the authors must include a statement that research was conducted in accordance with the Helsinki Declaration as revised 1989. All studies involving animals must state that the authors followed the guidelines for the use and care of laboratory animals of the author's institution or the National Research Council or any national law pertaining to animal research care.

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Contributors

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Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Manuscript Submission

The *Journal of Affective Disorders* now proceeds totally online via an electronic submission system. Mail submissions will no longer be accepted. By accessing the online submission system, <http://ees.elsevier.com/jad/>, you will be guided stepwise through the creation and uploading of the various files. When submitting a manuscript online, authors need to provide an electronic version of their manuscript and any accompanying figures and tables.

The author should select from a list of scientific classifications, which will be used to help the editors select reviewers with appropriate expertise, and an article type for their manuscript. Once the uploading is done, the system automatically generates an electronic (PDF) proof, which is then used for reviewing. All correspondence, including the Editor's decision and request for revisions, will be processed through the system and will reach the corresponding author by e-mail.

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Authors may send queries concerning the submission process or journal procedures to the appropriate Editorial Office:

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For the American Hemisphere, Africa, and Japan: H.S. Akiskal, Director of International Mood Center, University of California at San Diego, 9500 Gilman Drive #0737, La Jolla, CA 92093-0737, USA, USA; E-mail: hakiskal@ucsd.edu.

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Types of Papers

The Journal primarily publishes:

full-length Research Reports describing original work (4000-5000 words, excluding references and up to 6 tables/figures)

Brief Reports (1500-2000 words, excluding references and a maximum of 2 tables/figures)

evidence-based Review Articles (up to 8000 words, excluding references and up to 10 tables/figures). Reviews should be systematic and give details as to search strategy used.

Rapid Communications (1500-2000 words, excluding references and a maximum of 2 tables/figures).

Preliminary Communications (up to 3000 words, excluding references and maximum 3 tables/figures). **Books for review** should be sent to the appropriate editorial office (see above).

At the discretion of the accepting Editor-in-Chief, and/or based on reviewer feedback, authors may be allowed fewer or more than these guidelines.

Retraction Policy

It is a general principle of scholarly communication that the editor of a learned journal is solely and independently responsible for deciding which articles submitted to the journal shall be published. In making this decision the editor is guided by policies of the journal's editorial board and constrained by such legal requirements in force regarding libel, copyright infringement and plagiarism. Although electronic methods are available to detect plagiarism and duplicate publications, editors nonetheless rely in large part on the integrity of authors to fulfil their responsibilities within the requirements of publication ethics and only submit work to which they can rightfully claim authorship and which has not previously been published.

An outcome of this principle is the importance of the scholarly archive as a permanent, historic record of the transactions of scholarship. Articles that have been published shall remain extant, exact and unaltered as far as is possible. However, very occasionally circumstances may arise where an article is published that must later be retracted or even removed. Such actions must not be undertaken lightly and can only occur under exceptional circumstances, such as:

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Preparation of Manuscripts

Articles should be in English. The title page should appear as a separate sheet bearing title (without article type), author names and affiliations, and a footnote with the corresponding author's full contact information, including address, telephone and fax numbers, and e-mail address (failure to include an e-mail address can delay processing of the manuscript).

Papers should be divided into sections headed by a caption (e.g., Introduction, Methods, Results, Discussion). A structured abstract of no more than 250 words should appear on a separate page with the following headings and order: Background, Methods, Results, Limitations, Conclusions (which should contain a statement about the clinical relevance of the research). A list of three to six key words should appear under the abstract. **Authors should note that the 'limitations' section both in the discussion of the paper AND IN A STRUCTURED ABSTRACT are essential. Failure to include it may delay in processing the paper, decision making and final publication.**

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Figures and Photographs of good quality should be submitted online as a separate file. Please use a lettering that remains clearly readable even after reduction to about 66%. For every figure or photograph, a legend should be provided. All authors wishing to use illustrations already published must first obtain the permission of the author and publisher and/or copyright holders and give precise reference to the original work. This permission must include the right to publish in electronic media.

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Tables should be numbered consecutively with Arabic numerals and must be cited in the text in sequence. Each table, with an appropriate brief legend, comprehensible without reference to the text, should be typed on a separate page and uploaded online. Tables should be kept as simple as possible and wherever possible a graphical representation used instead. Table titles should be complete but brief. Information other than that defining the data should be presented as footnotes.

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(see also the Guide to Publishing with Elsevier: <http://www.elsevier.com/guidepublication>). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

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A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

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Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). See <http://www.elsevier.com/highlights> for examples.

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Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

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